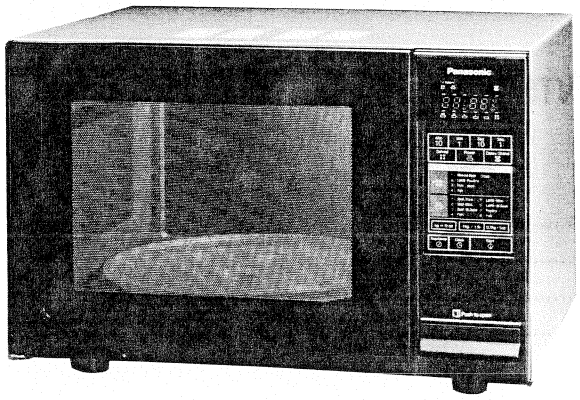
ORDER NO. MOD

Service Manual

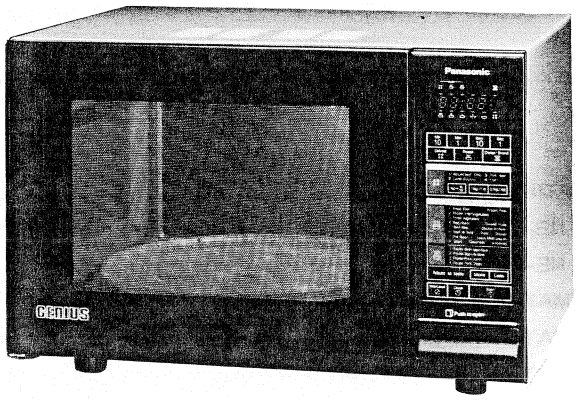
Microwave Oven

NE-671, NE-691

For United Kingdom
For NAFI



NE-671



NE-691

Specifications

Power Source :	240 V AC Single Phase, 50 Hz
Power Requirement :	1,230W (5.2 A)
High Frequency Output :	70-600W
Oscillation Frequency :	2,450 MHz
Timer :	99 min. 99 sec. 9 hr. 99 min. for Simmer
Approximate Outside Dimensions :	530 mm (W) × 420 mm (D) × 345 mm (H)
Approximate Oven Cavity Dimensions :	330 mm (W) × 365 mm (D) × 235 mm (H)
Approximate Weight :	20 kg
Specifications subject to change without notice.	

Panasonic

Matsushita Electric Trading Co., Ltd.
P.O. Box 288, Central Osaka Japan

WARNING

* This product should be serviced only by trained, qualified personnel. As for the oven lamp, it is replaceable by the users.
* This service manual covers products for following markets.
  When troubleshooting or replacing parts, please refer to the country identifications shown below for your applicable product specification.
  BPQ·····For United Kingdom
  PPQ·····For NAFI

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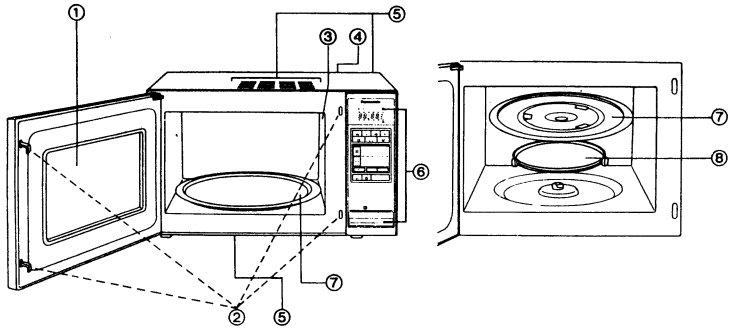
Outline Diagram



① **Oven Window**

② **Door Safety Lock System**
Before any cooking function can begin, oven door must be securely shut.

③ **Oven Light**
Will turn on whenever the door is opened or during cooking.

④ **Oven Light Cover**
Allows easy access to replace the oven light.

⑤ **Oven Air Vents**
Never block air vents during cooking.

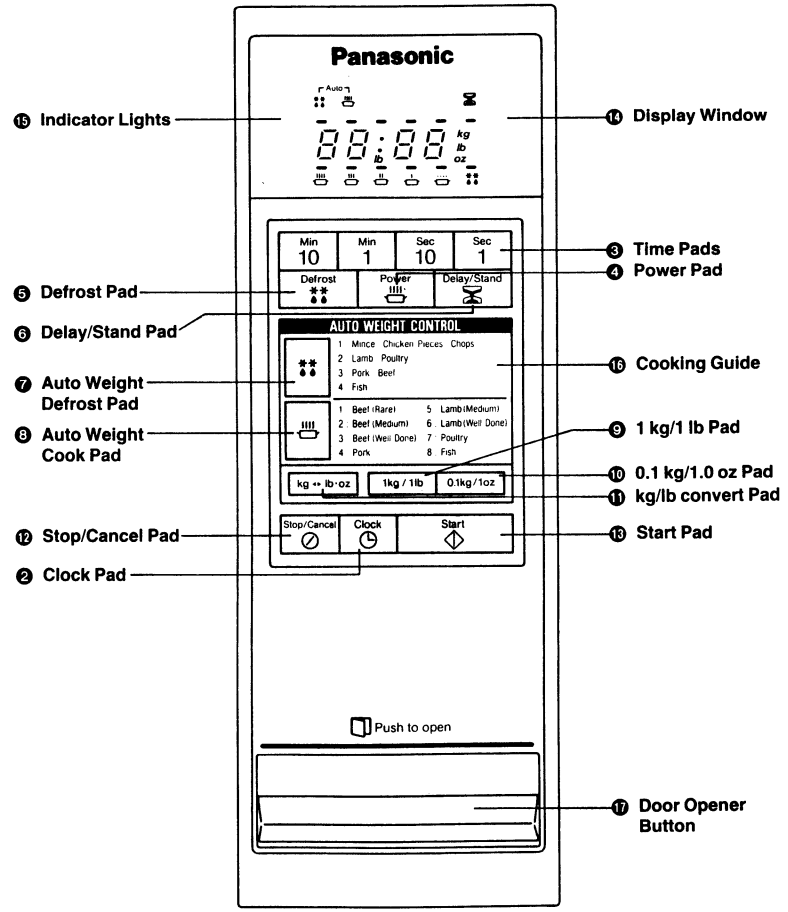
⑥ **Control Panel**
See page 9.

⑦ **Glass Tray**
Must be placed in the oven before cooking.

⑧ **Roller Ring**
Must be placed in the oven before cooking.

Control Panel

❶ **Controls with Auto Count-Up Feature**



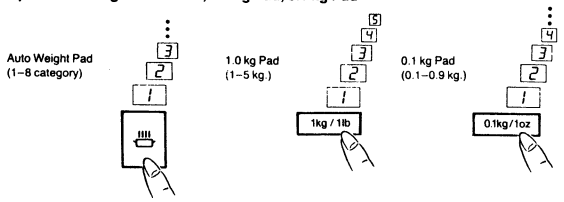
❶ **Indicator Lights**
❷ **Clock Pad**
❸ **Time Pads**
❹ **Power Pad**
❺ **Defrost Pad**
❻ **Delay/Stand Pad**
❼ **Auto Weight Defrost Pad**
❽ **Auto Weight Cook Pad**
❾ **1 kg/1 lb Pad**
❿ **0.1 kg/1.0 oz Pad**
⓫ **kg/lb convert Pad**
⓬ **Stop/Cancel Pad**
⓭ **Start Pad**
⓮ **Display Window**
⓯ **Cooking Guide**
⓰ **Door Opener Button**

Controls

❶ Auto Count Up:

The Time, Power, Weight Defrost Category, Weight Cook Category, 1.0 kg., and 0.1 kg. pads are all equipped with the Auto Count Up feature. By holding your finger on the pad, the readout in the display window will count up. After reaching the maximum function, the display will return to the starting point and continue to count up. To stop the readout simply remove your finger from the pad.
Note: When programming the oven, hold your finger firmly in the center of the pad.

Example: Auto Weight Cook Pad, 1.0 kg Pad, 0.1 kg Pad



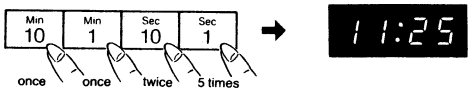
❷ Clock Pad:

When oven is first plugged in, the colon in the display window will blink.

To set clock

Step 1. Enter time of day by pressing appropriate Time Pads.
►Time appears in display window; colon is blinking.

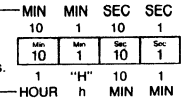
Example: To set 11:25 (a.m. or p.m.),
touch Time Pads from left to right as follows:



Step 2. Touch Clock Pad.
►Colon stops blinking; time of day is entered and locked into display.

NOTES ON CLOCK SETTING
1. Clock must be set before oven will operate.
2. To reset time of day touch Clock Pad twice to clear the time. Colon will begin to blink. Enter the correct time of day by following the above procedures.
3. The clock will keep the time of day as long as oven is plugged in and electricity is supplied.

❸ Time Pads:



1. Basic Time Setting—All powers except SIMMER
The Pads serve as a 10 minute pad, 1 minute pad, 10 second pad and 1 second pad from the left, and can be programmed up to 99 minutes and 99 seconds.

(Example 1: To set 13 minutes 45 seconds)
Touch;
10 MIN Pad: once
1 MIN Pad: 3 times
10 SEC Pad:4 times
1 SEC Pad: 5 times

(Example 2: To set 30 seconds)
Touch;
10 SEC Pad: 3 times

2. SIMMER power
The pads serve as a 1 hour pad, an inoperable pad, 10 minute pad and 1 minute pad from the left, and can be programmed up to 9 hours and 99 minutes.

(Example 1: To set 2 hours 25 minutes)
Touch;
1 HOUR Pad: twice
10 MIN Pad: twice
1 MIN Pad: 5 times

(Example 2: To set 45 minutes)
Touch;
10 MIN Pad: 4 times
1 MIN Pad: 5 times

Note: When SIMMER is programmed for 1 hour or longer, the time in the display window counts down minute by minute. When less than 59 minutes (59 00) remain, the time counts down second by second.

❹ Power Pad:

Automatically counts down from High to Warm. The following is the approximate wattage for each power level.

HIGH power	600W	SIMMER power	180W
MEDIUM power	480W	WARM power	70W
LOW power	360W		

❺ Defrost Pad:

•Gives you approximately 240 watts power.

❻ Delay/Stand Pad:
This feature allows you to programme a Stand Time after cooking is completed. This pad can also be used to programme the oven as a minute timer.

Delay/Stand

❼ Auto Weight Defrost Pad:
This feature allows you to defrost meat or poultry by weight. Choose a defrosting category and programme the weight of the food. Weight must be programmed in kilogrammes and tenths of a kilogramme. For further information on Auto Weight Defrost refer to the Introduction in the Microwave Cookbook.
Press this pad to select the appropriate defrosting category 1 through 4. Listed chart on page 14 are the recommended foods and maximum weight limits for each category.

❽ Auto Weight Cook Pad:
This feature allows you to cook meat or poultry by weight. Choose a cook category and programme the weight of the food. Weight can be programmed both in kilogrammes and tenths of a kilogramme and in pound and ounce. For further information on Auto Weight Cook, refer to Introduction in Microwave Cookbook.
Press this pad to select the appropriate cook category 1 through 8. Listed chart on page 15 are the recommended foods and maximum weight limits for each category.

❾ 1 kg/1 lb Pad
Press this pad to programme the weight of your food by whole kilogramme, or pound.

1kg / 1lb

❿ 0.1 kg/1 oz Pad
Press this pad to program the weight of your food by a tenth of a kilogramme, or ounce.

0.1kg/1oz

⓫ kg/lb Convert Pad
When you select some category from Auto Weight Control, kg indication will be prepared for. If you tap one more, indication Lights change to lb. oz.
NOTE: If you once set the weight by kilogramme or pound, kg/lb Pad can't work.

kg ↔ lb·oz

⓬ Stop/Cancel Pad:
Before cooking: One tap clears your instructions.
During cooking: One tap temporarily stops the cooking process. Another tap cancels all your instructions and time of day appears in display window.

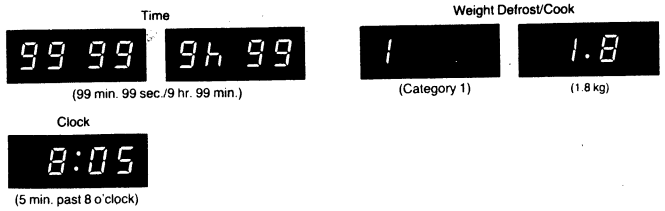
Stop/Cancel

⓭ Start Pad:
One tap allows oven to begin functioning. If door is opened or Stop/Cancel Pad is tapped once during oven operation, Start Pad must again be touched to restart oven.

Start

⓮ Display Window:
Display the time of day before or after cooking, time during cooking, Weight Defrost and Weight Cook category and weight.

Digital Readout Display:



⓯ Indicator Lights:
An indicator light will turn on when a specific power level and/or the following functions are selected: Auto Weight Defrost, Auto Weight Cook, Delay/Stand, Defrost, kg, lb, oz.

⓰ Cooking Guide:
Easy reference for use of Auto Weight Control Guide.

⓱ Door Opener Button
Allows you to open the door by pushing the Door Opener Button.

Opening the Door:
Opening the door during cooking will stop the cooking process without canceling the programme. Cooking resumes as soon as the door is closed and Start Pad is touched. The oven light will stay on or turn on whenever the door is opened.

Beep Sound:
When a pad is touched correctly, a beep will be heard. If a pad is touched and no beep is heard, the unit has not or cannot accept the instruction. The oven will beep twice between programmed stages. At the end of any completed programme, the oven will beep 5 times.

Operation Procedure

Auto Weight Defrost

Step 1

Press Auto Weight Defrost Pad to select Defrost Category 1 through 4.

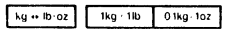
(Auto Weight)

▶Clock time disappears. The selected category number appears in the display window. Auto Weight Defrost indicator light turns on. kg or lb. oz indicator turns on.

Step 2

Select the correct indicator between kg and lb. oz by taping kg/lb convert pad.

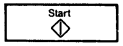
Set the weight of your food by pressing 1 kg/1 lb Pad and/or 0.1 kg/1 oz Pad.



▶Category number disappears and the weight selected appears in display window.

Step 3

Touch Start Pad.



After Oven Starts:

▶MICROWAVE DEFROSTING BEGINS. Turntable rotates. Oven light turns on. Auto Weight Defrost indicator light begins to blink. Weight in display disappears. Defrosting time appears and counts down second by second, or minute by minute.

▶WHEN DEFROSTING IS COMPLETED, oven beeps five times and shuts off. Turntable stops. The indicator light and oven light turn off. Time of day appears in display window.

NOTES ON AUTO WEIGHT DEFROST:

1. Categories for Weight Defrost are:

Category	Food	Maximum Weight
1	Mince, Chicken Pieces, Chops	2 kg (5 lb)
2	Lamb, Poultry	5 kg (11 lb)
3	Pork, Beef	4 kg (9 lb)
4	Fish	2 kg (5 lb)

2. Stand or Power level can be programmed after Auto Weight Defrost.

Auto Weight Cook

Step 1

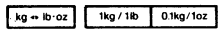
Press Auto Weight Cook Category Pad to select Cook Category 1 through 8.

▶Clock time disappears. The selected category number appears in the display window. Auto Weight Cook indicator light turns on. kg or lb. oz indicator turns on.

Step 2

Select the correct indicator between kg and lb. oz by taping kg/lb convert pad.

Set the weight of your food by pressing 1 kg/1 lb Pad and/or 0.1 kg/1 oz Pad.



▶Category number disappears and the weight selected appears in the display window.

Step 3

Touch Start Pad.

After Oven Starts:

▶MICROWAVE COOKING BEGINS. Turntable rotates. Oven light turns on. Auto Weight Cook indicator light begins to blink. Weight in display disappears. Cooking time appears and counts down second by second, or minute by minute.

▶WHEN COOKING IS COMPLETED, oven beeps five times and shuts off. Turntable stops rotating. The indicator light and oven light turn off. Time of day appears in display window.

NOTES ON AUTO WEIGHT COOK:

1. Categories for Weight Cook are:

Category	Food	Maximum Weight
1	Beef, (Rare)	4 kg (9 lb)
2	Beef, (Medium)	4 kg (9 lb)
3	Beef, (Well Done)	4 kg (9 lb)
4	Pork	4 kg (9 lb)
5	Lamb, (Medium)	4 kg (9 lb)
6	Lamb, (Well Done)	4 kg (9 lb)
7	Poultry	5 kg (11 lb)
8	Fish	2 kg (5 lb)

2. Stand or Power level can be programmed after Auto Weight Cook.
   For example: Auto Weight Cook→WARM power.

3. It is important that pork joints are cooked thoroughly when cooking pork always start with the fat side down and turn joint over after half the cooking time has elapsed. Shield any thin, raised or body areas and edges with pieces of foil. Check how well done food is, by using a thermometer five minutes before the end of cooking time.

Time Cooking

Defrost

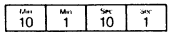
Step 1

Touch Defrost Pad.

▶Clock time disappears. Defrost indicator light turns on.

Step 2

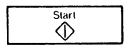
Set defrost time by pressing Time Pads.



▶Defrost time appears in display window in minutes and seconds.

Step 3

Touch Start Pad.



After Oven Starts:

▶MICROWAVE DEFROSTING BEGINS. Turntable rotates. Oven light turns on. Defrost indicator light begins to alternately blink and glow. Defrosting time counts down second by second.

▶WHEN DEFROSTING IS COMPLETED, oven beeps five times and shuts off. Turntable stops rotating. Defrost indicator light and oven light turn off. Time of day appears in display window.

One Stage Cooking

Step 1

Select cooking power by pressing Power Pad.

▶Clock time disappears. Selected power indicator light turns on.

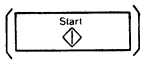
Step 2

Set cooking time by pressing Time Select Pads.

▶Cooking time appears in display window in minutes and seconds.

[Step 3. Touch Start Pad.]

OR



Two Stage Cooking

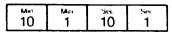
Step 3

Before touching Start Pad, select second cooking power by pressing Power Pad.

▶Previously selected time and power indicator light disappear from display window. Second stage power indicator light turns on.

Step 4

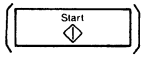
Set second stage cooking time by pressing Time Pads.



▶Second stage cooking time appears in display window.

[Step 5. Touch Start Pad.]

OR



Three Stage Cooking

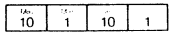
Step 5

Before touching Start Pad, select third stage cooking power by pressing Power Pad.

▶Previously selected time and power indicator light disappear from display window. Third stage power indicator light turns on.

Step 6

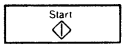
Set third stage cooking time by pressing Time Select Pads.



▶Third stage cooking time appears in display window.

Step 7

Touch Start Pad.



After Oven Starts:

▶MICROWAVE COOKING BEGINS. Turntable rotates. Third stage cooking time disappears and first stage cooking time reappears in the display window and begins to count down. First stage power indicator light turns on and starts to blink. Second stage power indicator light turns on. Third stage power indicator light remains on.

▶WHEN THE FIRST STAGE COOKING TIME HAS ELAPSED, a beep sounds twice. Second stage cooking time reappears in the display window and begins to count down. First stage power indicator light turns off. Second stage power indicator light starts to blink. Third stage power indicator light remains on.

▶WHEN THE SECOND STAGE COOKING TIME HAS ELAPSED, a beep sounds twice. Third stage cooking time reapears in the display window and begins to count down. Second stage power indicator light turns off. Third stage power indicator light starts to blink.

▶WHEN THE THIRD STAGE COOKING TIME HAS ELAPSED, five beeps are heard and oven turns off. Third stage power indicator light turns off. Oven light turns off and turntable stops rotating. Time of day reappears in the display window.

NOTES ON TIME AND POWER COOKING:

1. When SIMMER power is programmed "h" meaning Hour appears in the display window. Cooking time can only be programmed in hours and minutes.

2. When SIMMER power is programmed for 1 hour or longer, the time will count down minute by minute. When less than 59 minutes (59 00) remain, the time will count down second by second.

3. Examples of 2 and 3 stage programmed cooking are:

First Stage	Second Stage	Third Stage
HIGH, 8 minutes	→ Stand, 3 minutes	
HIGH, 9 minutes	→ LOW, 20 minutes	
Delay Stand	→ MEDIUM, 24 minutes	
HIGH, 10 minutes	→ MEDIUM, 20 minutes	→ Stand 5 minutes
Delay Stand	→ HIGH, 10 minutes	→ LOW, 50 minutes

Special Controls

Delay Start

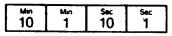
Step 1

Touch Delay/Stand Pad.

▶Clock time disappears from display window Delay/Stand indicator light turns on.

Step 2

Set the time you want to delay the oven to begin cooking by pressing Time Pads.



▶Selected delay time appears in display window.

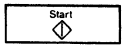
Step 3

Programme desired cooking according to directions already given in this manual.

▶Delay time and Delay/Stand indicator light disappears. Selected programme and indicator lights appear in display window.

Step 4

Touch Start Pad.



After Oven Starts:

▶NO COOKING ACTIVITY BEGINS. Turntable does not rotate. Oven light does not turn on. Selected programme disappears. Delay time reappears and begins to count down. While Delay/Stand indicator light turns on, and selected programme indicator light remains on.
▶WHEN THE DELAY TIME HAS ELAPSED, oven beeps twice and enters into previously selected cooking function. Oven light turns on and turntable begins to rotate. Delay/Stand indicator light turns off while next stage indicator lights begin to blink.
▶WHEN COOKING IS COMPLETED, oven beeps five times and shuts off.
Turntable stops rotating, oven light and indicator lights turn off, and time of day appears in display window.

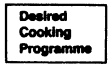
NOTES ON DELAY START:

1. With the Delay Start feature, the oven may be programmed to delay cooking up to 99 minutes 99 seconds before cooking starts.
2. If the oven is programmed based on above procedure, except Step 3, you may use it as a timer.
3. Only one or two stage cooking can be programmed after Delay/Stand.

Stand Time

Step 1

Programme desired cooking programme according to directions already given in this manual.



▶Selected programme and indicator light appear in display window.

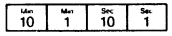
Step 2

Touch Delay/Stand Pad.

▶Previously selected programme and indicator light disappear. Delay/Stand indicator light turns on.

Step 3

Set desired amount of time by pressing Time Pads.



▶Stand time appears in display window. (A maximum of 99 minutes and 99 seconds may be programmed twice.)

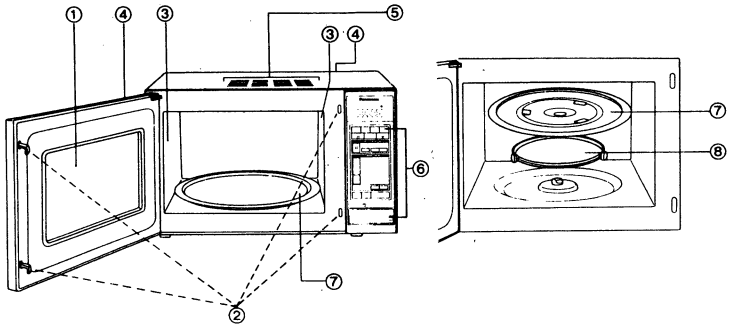
Step 4

Touch Start Pad.

After Oven Starts:

▶MICROWAVE ACTIVITY BEGINS. Turntable rotates, Oven light turns on. Previously selected programme appears in display window, and indicator light blinks.
▶WHEN MICROWAVE PROGRAM is completed, turntable stops, oven beeps twice, and standing time counts down. Delay/Stand indicator light remains on while oven light turns off.
▶AT END OF STANDING TIME, oven beeps five times and shuts off.
Delay/Stand indicator light turns off. Time of day appears in display window.

Outline Diagram



① **Oven Window**

② **Door Safety Lock System**
Before any cooking function can begin, oven door must be securely shut.

③ **Oven Light**
Will turn on whenever the door is opened or during cooking.

④ **Oven Light Cover**
Allows easy access to replace the oven light.

⑤ **Oven Air Vents**
Never block air vents during cooking.

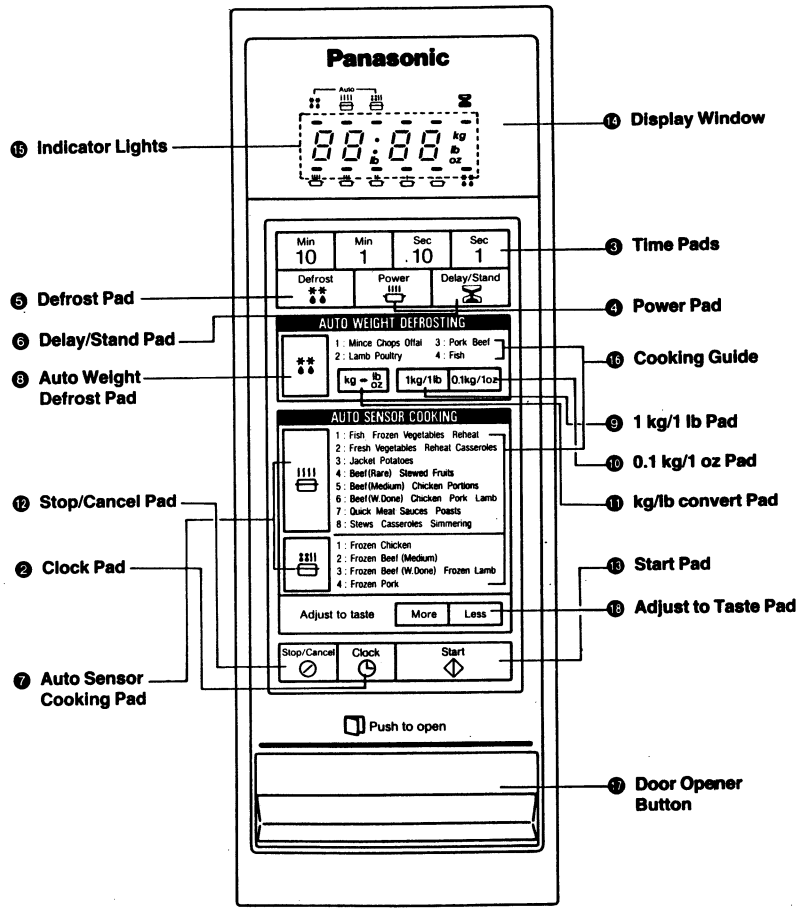
⑥ **Control Panel**
See page 9.

⑦ **Glass Tray**
Must be placed in the oven before cooking.

⑧ **Roller Ring**
Must be placed in the oven before cooking.

Control Panel

❶ **Controls with Auto Count-Up Feature**

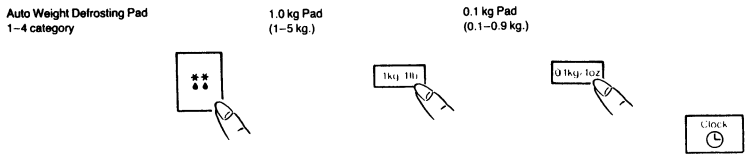


Controls

❶ Auto Count Up:

The Time, Power, Weight Defrost Category, Weight Cook Category, 1.0 kg., and 0.1 kg. pads are all equipped with the Auto Count Up feature. By holding your finger on the pad, the readout in the display window will count up. After reaching the maximum function, the display will return to the starting point and continue to count up. To stop the readout simply remove your finger from the pad.
Note: When programming the oven, hold your finger firmly in the center of the pad.

Example: Auto Weight Defrost Pad, 1.0 kg Pad, 0.1 kg Pad



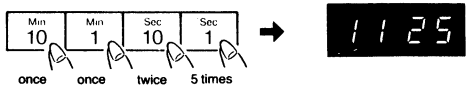
❷ Clock Pad:

When oven is first plugged in, the colon in the display window will blink.

To set clock

Step 1. Enter time of day by pressing appropriate Time Pads.
►Time appears in display window; colon is blinking.

Example: To set 11:25 (a.m. or p.m.),
touch Time Pads from left to right as follows:

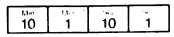


Step 2. Touch Clock Pad.
►Colon stops blinking; time of day is entered and locked into display.

NOTES ON CLOCK SETTING
1. Clock must be set before oven will operate.
2. To reset time of day touch Clock Pad twice to clear the time. Colon will begin to blink. Enter the correct time of day by following the above procedures.
3. The clock will keep the time of day as long as oven is plugged in and electricity is supplied.

❸ Time Pads:

1. Basic Time Setting—All powers except SIMMER
The Pads serve as a 10 minute pad, 1 minute pad, 10 second pad and 1 second pad from the left, and can be programmed up to 99 minutes and 99 seconds.



(Example 1: To set 13 minutes 45 seconds)
Touch;
10 MIN Pad: once
1 MIN Pad: 3 times
10 SEC Pad:4 times
1 SEC Pad: 5 times

(Example 2: To set 30 seconds)
Touch;
10 SEC Pad: 3 times

2. SIMMER power
The pads serve as a 1 hour pad, an inoperable pad, 10 minute pad and 1 minute pad from the left, and can be programmed up to 9 hours and 99 minutes.

(Example 1: To set 2 hours 25 minutes)
Touch;
1 HOUR Pad: twice
10 MIN Pad: twice
1 MIN Pad: 5 times

(Example 2: To set 45 minutes)
Touch;
10 MIN Pad: 4 times
1 MIN Pad: 5 times

Note: When SIMMER is programmed for 1 hour or longer, the time in the display window counts down minute by minute. When less than 59 minutes (59 00) remain, the time counts down second by second.

❹ Power Pad:

Automatically counts down from High to Warm. The following is the approximate wattage for each power level.

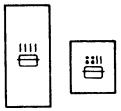
HIGH power	600W	SIMMER power	180W
MEDIUM power	480W	WARM power	70W
LOW power	360W		

❺ Defrost Pad:

Gives you approximately 240 watts power.

❻ Delay/Stand Pad:
This feature allows you to programme a Stand Time after cooking is completed. This pad can also be used to programme the oven as a minute timer.

❼ Auto Sensor Cooking Pad:
This feature allows you to cook meat or poultry by choosing a cook category. For further information on Auto Sensor Cooking, refer to Introduction in Microwave Cookbook.
Press this pad to select the appropriate cook category. Listed chart on page 15 are the recommended foods for each category.



❽ Auto Weight Defrost Pad:
This feature allows you to defrost meat or poultry by weight. Choose a defrosting category and programme the weight of the food. Weight must be programmed in kilogrammes and tenths of a kilogramme. For further information on Auto Weight Defrost refer to the Introduction in the Microwave Cookbook.
Press this pad to select the appropriate defrosting category 1 through 4. Listed chart on page 14 are the recommended foods and maximum weight limits for each category.

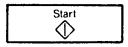
❾ 1 kg/1 lb Pad
Press this pad to programme the weight of your food by whole kilogramme, or pound.

❿ 0.1 kg/1 oz Pad
Press this pad to program the weight of your food by a tenth of a kilogramme, or ounce.

⓫ kg/lb Convert Pad
One tap allows Display Window to prepare for indicating kg, when you use Auto Weight Control. If you tap one more, indication Lights change to lb. oz.
NOTE: If you once set the weight by kilogramme or pound, kg/lb Pad can't work.

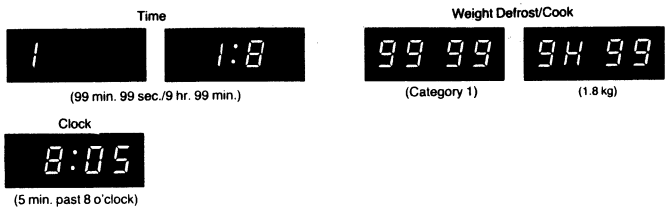
⓬ Stop/Cancel Pad:
Before cooking: One tap clears your instructions.
During cooking: One tap temporarily stops the cooking process. Another tap cancels all your instructions and time of day appears in display window.

⓭ Start Pad:
One tap,allows oven to begin functioning. If door is opened or Stop/Cancel Pad is tapped once during oven operation, Start Pad must again be touched to restart oven.



⓮ Display Window:
Display the time of day before or after cooking, time during cooking, Auto Sensor Cook category, and Weight Cook category and weight.

Digital Readout Display:



⓯ Indicator Lights:
An indicator light will turn on when a specific power level and/or the following functions are selected: Auto Weight Defrost, Auto Sensor Cook, Delay/Stand.

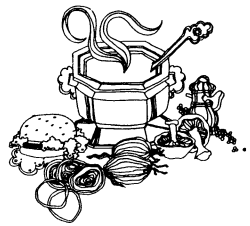
⓰ Cooking Guide:
Easy reference for use of Auto Weight Defrosting and Auto Sensor Cooking.

⓱ Door Opener Button:
Allows you to open the door by pushing the Door Opener Button.

Opening the Door:
Opening the door during cooking will stop the cooking process without canceling the programme. Cooking resumes as soon as the door is closed and Start Pad is touched. The oven light will stay on or turn on whenever the door is opened.

Beep Sound:
When a pad is touched correctly, a beep will be heard. If a pad is touched and no beep is heard, the unit has not or cannot accept the instruction. The oven will beep twice between programmed stages. At the end of any completed programme, the oven will beep 5 times.

⓲ Adjust to Taste Pad:
When you cook by Auto Sensor Cooking. This Pad allows you to adjust to taste by pushing More Pad or Less Pad before pushing Start Pad.



Operation Procedure

Auto Weight Defrost

Step 1

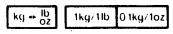
Press Auto Weight Defrost Pad to select Defrost Category 1 through 4.

(Auto Weight)

▶Clock time disappears. The selected category number appears in the display window. Auto Weight Defrost indicator light turns on.

Step 2

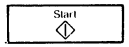
Set the weight of your food by pressing 1 kg/1 lb Pad and/or 0.1 kg/1 oz Pad.



▶Category number disappears and the weight selected appears in display window.

Step 3

Touch Start Pad.



After Oven Starts:

▶MICROWAVE DEFROSTING BEGINS. Turntable rotates. Oven light turns on. Auto Weight Defrost indicator light begins to blink. Weight in display disappears. Defrosting time appears and counts down second by second, or minute by minute.

▶WHEN DEFROSTING IS COMPLETED, oven beeps five times and shuts off. Turntable stops. The indicator light and oven light turn off. Time of day appears in display window.

NOTES ON AUTO WEIGHT DEFROST:

1. Categories for Auto Weight Defrost are:

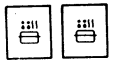
Category	Food	Maximum Weight
1	Mince, Chops, Offal	2 kg
2	Lamb, Poultry	5 kg
3	Pork, Beef	4 kg
4	Fish	2 kg

2. Stand or Power level can be programmed after Auto Weight Defrost.

AUTO SENSOR COOKING

Step 1

Press Auto Sensor Cooking Category Pad to select Cook Category.


or

▶Clock time disappears. The selected category number appears in the display window. Auto Sensor Cooking indicator light turns on.

Step 2

Touch Start Pad.

After Oven Starts:

▶MICROWAVE COOKING BEGINS. Turntable rotates. Oven light turns on. Auto Sensor Cooking indicator light begins to blink. The selected category number still remains.

- When Humidity Sensor detects moisture which escapes from the food, Time readout appears in the Display Window, indicating remaining amount of time that food will cook. Selected Auto Sensor programme number disappears. Oven beeps twice.

▶WHEN COOKING IS COMPLETED, oven beeps five times and shuts off. Turntable stops rotating. The indicator light and oven light turn off. Time of day appears in display window.

NOTES ON AUTO SENSOR COOKING:

1. Categories for Auto Cook are:

Category	Food
	1: Fish Frozen Vegetables Reheat 2: Fresh Vegetables Reheat Casseroles 3: Jacket Potatoes 4: Beef (Rare) Stewed Fruits 5: Beef (Medium) Chicken Portions 6: Beef (W.Done) Chicken Pork Lamb 7: Quick Meat Sauces Pot Roasts 8: Stews Casseroles Simmering

2. Categories for Auto Defrost and cook are:

Category	Food
	1: Frozen Chicken 2: Frozen Beef (Medium) 3: Frozen Beef (W.Done) Frozen Lamb 4: Frozen Pork

3. Stand or Power level can be programmed after Auto Sensor Cooking.
   For example: Auto Sensor Cooking—WARM power.
4. For proper cooking results on Auto Sensor programme, be sure to cover foods tightly with plastic film, or place in a glass casserole with lid as directed by recipe.
5. When Humidity Sensor detects moisture and oven calculates remainder of cooking time to be over 60 minutes, time will appear as hour and minutes. Seconds will not visibly count down until 59 minutes remain.

IMPORTANT:

- When cooking with Auto Sensor, do not interrupt for more than one minute for better cooking result as long as Auto Sensor Cooking category number is indicated in the Display Window.
- All foods for Auto Sensor Cooking to cook are taken from their normal storage place.
- All foods for Auto Sensor Cooking to defrost and cook should be solidly frozen.
- Before using Auto Sensor feature, make sure glass tray in the oven is dry to assure best Auto cooking results.
- Room temperature or heat surrounding the oven should not be above 35°C or below 0°C when using the Auto Sensor Cooking cycle. Inaccurate cooking may result.
- When selecting Auto Sensor Cooking for frozen foods, do not expect to be completely defrosted to be cooked, when oven beeps twice.
  This is a total cycle for frozen foods and foods should not be removed until the end of the cook cycle.
  For defrosting foods only, use Defrost cycle, or Auto Weight Defrost.

Time Cooking

Defrost

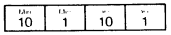
Step 1

Touch Defrost Pad.

►Clock time disappears. Defrost indicator light turns on.

Step 2

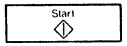
Set defrost time by pressing Time Pads.



►Defrost time appears in display window in minutes and seconds.

Step 3

Touch Start Pad.



After Oven Starts:

►MICROWAVE DEFROSTING BEGINS. Turntable rotates. Oven light turns on. Defrost indicator light begins to alternately blink and glow. Defrosting time counts down second by second.

►WHEN DEFROSTING IS COMPLETED, oven beeps five times and shuts off. Turntable stops rotating. Defrost indicator light and oven light turn off. Time of day appears in display window.

One Stage Cooking

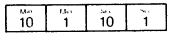
Step 1

Select cooking power by pressing Power Pad.

►Clock time disappears. Selected power indicator light turns on.

Step 2

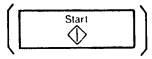
Set cooking time by pressing Time Select Pads.



►Cooking time appears in display window in minutes and seconds.

[Step 3. Touch Start Pad.]

OR



Two Stage Cooking

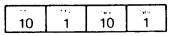
Step 3

Before touching Start Pad, select second cooking power by pressing Power Pad.

►Previously selected time and power indicator light disappear from display window. Second stage power indicator light turns on.

Step 4

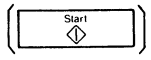
Set second stage cooking time by pressing Time Pads.



►Second stage cooking time appears in display window.

[Step 5. Touch Start Pad.]

OR



Three Stage Cooking

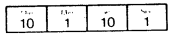
Step 5

Before touching Start Pad, select third stage cooking power by pressing Power Pad.

►Previously selected time and power indicator light disappear from display window. Third stage power indicator light turns on.

Step 6

Set third stage cooking time by pressing Time Select Pads.



►Third stage cooking time appears in display window.

Step 7

Touch Start Pad.

After Oven Starts:

►MICROWAVE COOKING BEGINS. Turntable rotates. Third stage cooking time disappears and first stage cooking time reappears in the display window and begins to count down. First stage power indicator light turns on and starts to blink. Second stage power indicator light turns on. Third stage power indicator light remains on.

►WHEN THE FIRST STAGE COOKING TIME HAS ELAPSED, a beep sounds twice. Second stage cooking time reappears in the display window and begins to count down. First stage power indicator light turns off. Second stage power indicator light starts to blink. Third stage power indicator light remains on.

►WHEN THE SECOND STAGE COOKING TIME HAS ELAPSED, a beep sounds twice. Third stage cooking time reapears in the display window and begins to count down. Second stage power indicator light turns off. Third stage power indicator light starts to blink.

►WHEN THE THIRD STAGE COOKING TIME HAS ELAPSED, five beeps are heard and oven turns off. Third stage power indicator light turns off. Oven light turns off and turntable stops rotating. Time of day reappears in the display window.

NOTES ON TIME AND POWER COOKING:

1. When SIMMER power is programmed "H" meaning Hour appears in the display window. Cooking time can only be programmed in hours and minutes.

2. When SIMMER power is programmed for 1 hour or longer, the time will count down minute by minute: When less than 59 minutes (59 00) remain, the time will count down second by second.

3. Examples of 2 and 3 stage programmed cooking are:

First Stage	Second Stage	Third Stage
HIGH, 8 minutes	→ Stand, 3 minutes	
HIGH, 9 minutes	→ LOW, 20 minutes	
Delay Stand	→ MEDIUM, 24 minutes	
HIGH, 10 minutes	→ MEDIUM, 20 minutes	→ Stand 5 minutes
Delay Stand	→ HIGH, 10 minutes	→ LOW, 50 minutes

Special Controls

Delay Start

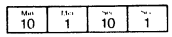
Step 1

Touch Delay/Stand Pad.

▶Clock time disappears from display window Delay/Stand indicator light turns on.

Step 2

Set the time you want to delay the oven to begin cooking by pressing Time Pads.



▶Selected delay time appears in display window.

Step 3

Programme desired cooking according to directions already given in this manual.

▶Delay time and Delay/Stand indicator light disappears. Selected programme and indicator lights appear in display window.

Step 4

Touch Start Pad.

After Oven Starts:

▶NO COOKING ACTIVITY BEGINS. Turntable does not rotate. Oven light does not turn on. Selected programme disappears. Delay time reappears and begins to count down. While Delay/Stand indicator light turns on, and selected programme indicator light remains on.

▶WHEN THE DELAY TIME HAS ELAPSED, oven beeps twice and enters into previously selected cooking function. Oven light turns on and turntable begins to rotate. Delay/Stand indicator light turns off while next stage indicator lights begin to blink.

▶WHEN COOKING IS COMPLETED, oven beeps five times and shuts off. Turntable stops rotating, oven light and indicator lights turn off, and time of day appears in display window.

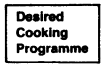
NOTES ON DELAY START:

1. With the Delay Start feature, the oven may be programmed to delay cooking up to 99 minutes 99 seconds before cooking starts.
2. If the oven is programmed based on above procedure, except Step 3, you may use it as a timer.
3. Only one or two stage cooking can be programmed after Delay/Stand.

Stand Time

Step 1

Programme desired cooking programme according to directions already given in this manual.



▶Selected programme and indicator light appear in display window.

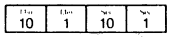
Step 2

Touch Delay/Stand Pad.

▶Previously selected programme and indicator light disappear. Delay/Stand indicator light turns on.

Step 3

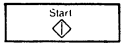
Set desired amount of time by pressing Time Pads.



▶Stand time appears in display window. (A maximum of 99 minutes and 99 seconds may be programmed twice.)

Step 4

Touch Start Pad.



After Oven Starts:

▶MICROWAVE ACTIVITY BEGINS. Turntable rotates, Oven light turns on. Previously selected programme appears in display window, and indicator light blinks.

▶WHEN MICROWAVE PROGRAMME is completed, turntable stops, oven beeps twice, and standing time counts down. Delay/Stand indicator light turns on while oven light turns off.

▶AT END OF STANDING TIME, oven beeps five times and shuts off. Delay/Stand indicator light turns off. Time of day appears in display window.

SCHEMATIC DIAGRAM (NE-671)

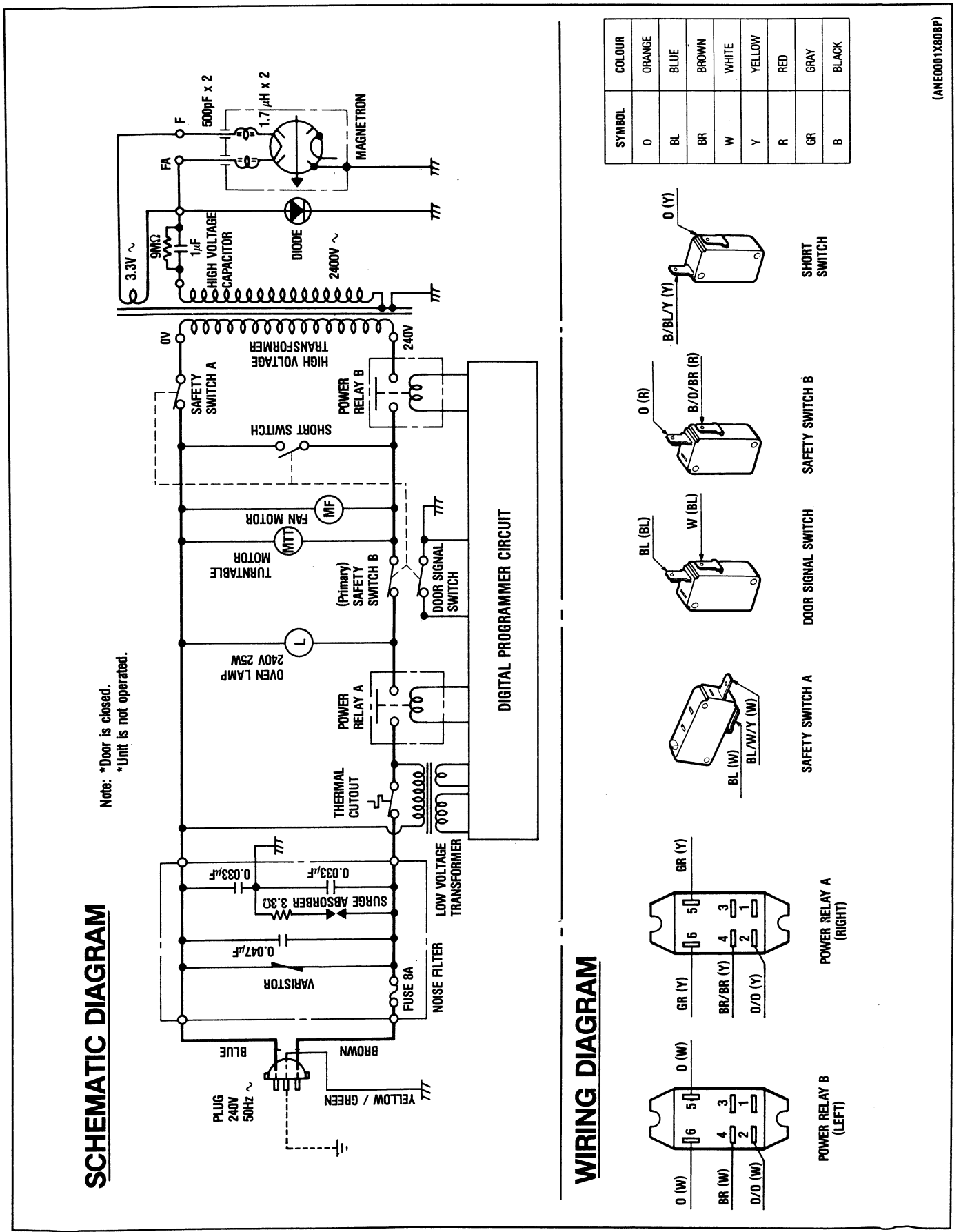


Fig. 1

SCHEMATIC DIAGRAM (NE-691)

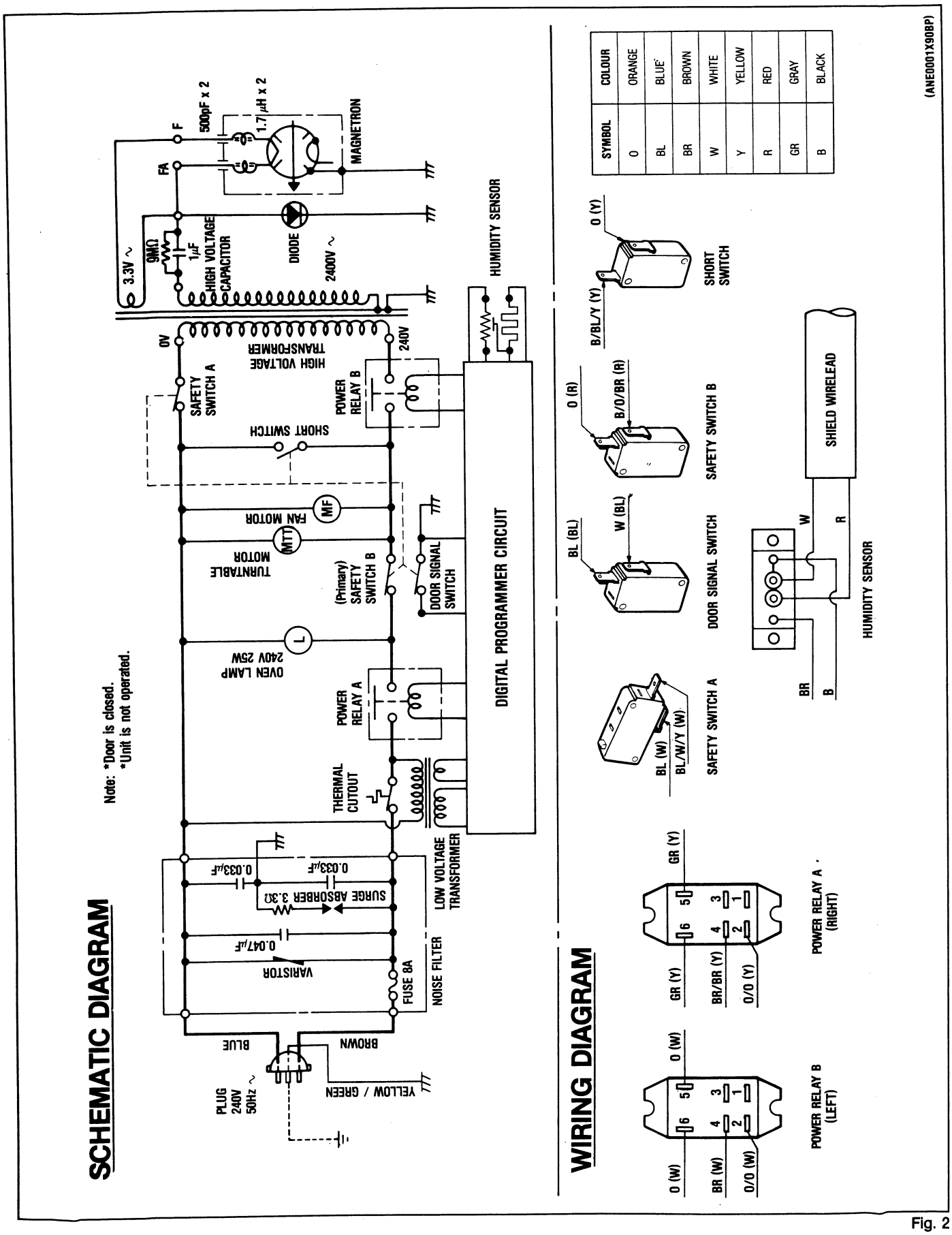


Fig. 2

DESCRIPTION OF OPERATING SEQUENCE

1. Variable power cooking control

The coil of power relay B is energized intermittently by the digital programmer circuit, when the oven is set at any power selection except for High power position. The digital programmer circuit controls the ON-OFF time of power relay B contacts in order to vary the output power of the microwave oven from "Warm" to "High" power.One complete ON and OFF cycle of power relay B is 22 seconds.

The relation between indications on the control panel and the output of the microwave oven is as shown in **Fig. 3.**

NOTE: **The ON/OFF time ratio does not correspond with the percentage of microwave power since approximately 2 seconds are required for heating of magnetron filament.**

Power setting	Output Power	On-Off Time of Power Reray B
High	600W (22/22)	22 sec ON, 22 sec ON
Medium	480W (19/22)	19 sec ON, 3 sec OFF, ON, OFF
Low	360W (15/22)	15 sec ON, 7 sec OFF, ON, OFF
Defrost	240W (10/22)	10 sec ON, 12 sec OFF, ON, OFF
Simmer	180W (9/22)	9 sec ON, 13 sec OFF, ON, OFF
Warm	70W (4/22)	4 sec ON, 18 sec OFF, ON, OFF

Fig. 3

2. Auto weight cook control ( ) (For NE-671 only)

Consists of the following pads :

- Auto Weight Cook Pad ( )
- kg/lb convert Pad
- Weight Pads
- Start Pad

When the Auto Weight Control, Cook feature is selected by tapping the appropriate key pads and the start pad is tapped:

(A) The digital programmer circuit determines the power level and cooking time to complete cooking and indicates the operating state in the display window. (See **Fig. 4**)
Fig. 4 shows the corresponding cooking times with respective weights by categories.

(B) When cooking time in the display window has elapsed, the oven turns off automatically by the controlled signal from the digital programmer circuit.

Auto weight Cook ( )

WEIGHT SELECTED	DISPLAY	COOKING TIME							
		CATEGORY 1	CATEGORY 2	CATEGORY 3	CATEGORY 4	CATEGORY 5	CATEGORY 6	CATEGORY 7	CATEGORY 8
1 kg	1.0 kg	15 min. 10 sec.	19 min. 50 sec.	25 min. 05 sec. (28 min. 00 sec.)	29 min. 45 sec.	21 min. 35 sec.	25 min. 05 sec.	18 min. 05 sec.	11 min. 40 sec.
2 kg	2.0 kg	31 min. 10 sec.	40 min. 20 sec.	53 min. 40 sec. (56 min. 40 sec.)	59 min. 30 sec.	43 min. 10 sec.	49 min. 30 sec.	36 min. 50 sec.	23 min. 20 sec.
3 kg	3.0 kg	51 min. 00 sec.	1 hour 03 min.	1 hour 20 min. (1 hour 28 min.)	1 hour 29 min.	1 hour 04 min.	1 hour 11 min.	58 min. 25 sec.	—
4 kg	4.0 kg	1 hour 10 min.	1 hour 27 min.	1 hour 47 min. (1 hour 59 min.)	1 hour 59 min.	1 hour 26 min.	1 hour 32 min.	1 hour 20 min.	—
5 kg	5.0 kg	—	—	—	—	—	—	1 hour 41 min.	—
1 LB	1 lb 00 oz	6 min. 56 sec.	9 min. 04 sec.	11 min. 28 sec. (12 min. 48 sec.)	13 min. 36 sec.	9 min. 52 sec.	11 min. 28 sec.	8 min. 16 sec.	5 min. 20 sec.
2 LB	2 lb 00 oz	13 min. 52 sec.	18 min. 08 sec.	22 min. 56 sec. (25 min. 36 sec.)	27 min. 12 sec.	19 min. 44 sec.	22 min. 56 sec.	16 min. 32 sec.	10 min. 40 sec.
3 LB	3 lb 00 oz	20 min. 48 sec.	27 min. 12 sec.	34 min. 24 sec. (38 min. 24 sec.)	40 min. 48 sec.	29 min. 36 sec.	34 min. 24 sec.	24 min. 48 sec.	16 min. 00 sec.
4 LB	4 lb 00 oz	27 min. 46 sec.	36 min. 20 sec.	49 min. 4 sec. (51 min. 16 sec.)	54 min. 24 sec.	39 min. 28 sec.	45 min. 48 sec.	33 min. 08 sec.	21 min. 20 sec.
5 LB	5 lb 00 oz	36 min. 50 sec.	47 min. 00 sec.	1 hour 01 min. (1 hour 05 min.)	1 hour 08 min.	49 min. 20 sec.	55 min. 40 sec.	43 min. 00 sec.	26 min. 40 sec.
6 LB	6 lb 00 oz	45 min. 54 sec.	57 min. 40 sec.	1 hour 13 min. (1 hour 20 min.)	1 hour 21 min.	59 min. 12 sec.	1 hour 05 min.	52 min. 52 sec.	—
7 LB	7 lb 00 oz	54 min. 58 sec.	1 hour 08 min.	1 hour 25 min. (1 hour 34 min.)	1 hour 35 min.	1 hour 09 min.	1 hour 15 min.	1 hour 02 min.	—
8 LB	8 lb 00 oz	1 hour 04 min.	1 hour 19 min.	1 hour 38 min. (1 hour 48 min.)	1 hour 48 min.	1 hour 18 min.	1 hour 25 min.	1 hour 12 min.	—
9 LB	9 lb 00 oz	1 hour 13 min.	1 hour 29 min.	1 hour 50 min. (2 hour 03 min.)	2 hour 02 min.	1 hour 28 min.	1 hour 35 min.	1 hour 22 min.	—
10 LB	10 lb 00 oz	—	—	—	—	—	—	1 hour 32 min.	—
11 LB	11 lb 00 oz	—	—	—	—	—	—	1 hour 42 min.	—
12 LB	12 lb 00 oz	—	—	—	—	—	—	1 hour 52 min.	—

Fig. 4

NOTE: **The cooking times shown in the bracket ( ) of CATEGORY 3 are applicable to only for earlier stage production units.**

To use this chart:

(A) Select the cooking category 1~8 by tapping the Auto Weight Cook Pad ( ).

(B) Select the correct weight indicator between kg and lb. oz by tapping kg/lb convert pad.

(C) Select the weight by tapping the appropriate weight control pad.

(D) Tap the start pad.

3. Auto weight defrost control (⁂)

Consists of the following pads:
- Auto Weight Defrost Pad (⁂)
- kg/lb convert Pad
- Weight Pads
- Start Pad

When the Auto Weight Control, Defrost feature is selected and the Start Pad is tapped:

(A) The digital programmer circuit functions exactly the same as when Auto Weight Cook control is selected, except that cooking powers and cooking times are as shown in **Fig. 5A & 5B.**
Fig. 5A & 5B shows the defrosting times for respective weights by categories.

Auto Weight Defrost (⁂) NE-671

WEIGHT SELECTED	DISPLAY	TOTAL DEFROSTING TIME			
		CATEGORY 1	CATEGORY 2	CATEGORY 3	CATEGORY 4
1 kg	1.0 kg	33 min. 15 sec.	42 min. 00 sec.	45 min. 30 sec.	17 min. 30 sec.
2 kg	2.0 kg	1 hour 06 min.	1 hour 24 min.	1 hour 31 min.	35 min. 00 sec.
3 kg	3.0 kg	—	2 hour 06 min.	2 hour 16 min.	—
4 kg	4.0 kg	—	2 hour 48 min.	3 hour 02 min.	—
5 kg	5.0 kg	—	3 hour 30 min.	—	—
1 LB	1 lb 00 oz	15 min. 12 sec.	19 min. 12 sec.	20 min. 48 sec.	8 min. 00 sec.
2 LB	2 lb 00 oz	30 min. 24 sec.	38 min. 24 sec.	41 min. 36 sec.	16 min. 00 sec.
3 LB	3 lb 00 oz	45 min. 36 sec.	57 min. 36 sec.	1 hour 02 min.	24 min. 00 sec.
4 LB	4 lb 00 oz	1 hour 00 min.	1 hour 16 min.	1 hour 23 min.	32 min. 00 sec.
5 LB	5 lb 00 oz	1 hour 16 min.	1 hour 36 min.	1 hour 44 min.	40 min. 00 sec.
6 LB	6 lb 00 oz	—	1 hour 55 min.	2 hour 04 min.	—
7 LB	7 lb 00 oz	—	2 hour 14 min.	2 hour 25 min.	—
8 LB	8 lb 00 oz	—	2 hour 33 min.	2 hour 46 min.	—
9 LB	9 lb 00 oz	—	2 hour 52 min.	3 hour 07 min.	—
10 LB	10 lb 00 oz	—	3 hour 12 min.	—	—
11 LB	11 lb 00 oz	—	3 hour 31 min.	—	—

Fig. 5A

Auto Weight Defrost (⁂) NE-691

WEIGHT SELECTED	DISPLAY	TOTAL DEFROSTING TIME			
		CATEGORY 1	CATEGORY 2	CATEGORY 3	CATEGORY 4
1 kg	1.0 kg	34 min. 00 sec.	41 min. 30 sec.	45 min. 00 sec.	17 min. 30 sec.
2 kg	2.0 kg	1 hour 08 min.	1 hour 23 min.	1 hour 30 min.	35 min. 00 sec.
3 kg	3.0 kg	—	2 hour 04 min.	2 hour 15 min.	—
4 kg	4.0 kg	—	2 hour 46 min.	3 hour 00 min.	—
5 kg	5.0 kg	—	3 hour 27 min.	—	—
1 LB	1 lb 00 oz	15 min. 12 sec.	19 min. 12 sec.	20 min. 48 sec.	8 min. 00 sec.
2 LB	2 lb 00 oz	30 min. 24 sec.	38 min. 24 sec.	41 min. 36 sec.	16 min. 00 sec.
3 LB	3 lb 00 oz	45 min. 36 sec.	57 min. 36 sec.	1 hour 02 min.	24 min. 00 sec.
4 LB	4 lb 00 oz	1 hour 00 min.	1 hour 16 min.	1 hour 23 min.	32 min. 00 sec.
5 LB	5 lb 00 oz	1 hour 16 min.	1 hour 36 min.	1 hour 44 min.	40 min. 00 sec.
6 LB	6 lb 00 oz	—	1 hour 55 min.	2 hour 04 min.	—
7 LB	7 lb 00 oz	—	2 hour 14 min.	2 hour 25 min.	—
8 LB	8 lb 00 oz	—	2 hour 33 min.	2 hour 46 min.	—
9 LB	9 lb 00 oz	—	2 hour 52 min.	3 hour 07 min.	—
10 LB	10 lb 00 oz	—	3 hour 12 min.	—	—
11 LB	11 lb 00 oz	—	3 hour 31 min.	—	—

Fig. 5B

AUTO SENSOR EXPLANATION, K FACTORS AND POWER LEVELS (For NE-691 only)

1. Auto sensor cooking

Auto sensor cooking is a revolutionary way to cook by microwave without setting a power level or selecting a time.
All that is necessary is to select an Auto Sensor Program before starting to cook.

Understanding of Auto Sensor Cooking

As a food cooks, a certain amount of steam is produced. If the food is covered, this steam builds up and eventually escapes from the container. In Auto Sensor Cooking, a carefully designed instrument, called the humidity sensor element, senses this escape of steam. Then, based upon the Auto Sensor Program selected, the unit will automatically determine the correct power level and the proper length of time it will take to cook the food.

NOTE: Auto Sensor Cooking is successful with the foods and recipes found in the Auto Sensor Cooking Guide. Because of the vast differences in food composition, items not mentioned in the Cooking Guide should be prepared in the microwave oven using power select and time features. Please consult Variable Power Microwave Cookbook for procedures.

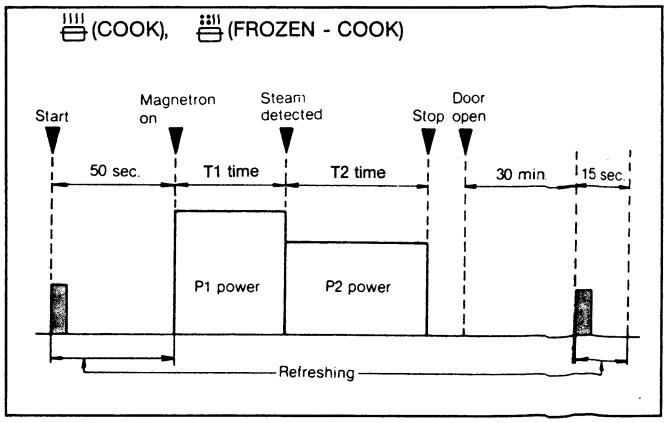


Fig. 6

2. Auto sensor cooking process

Explanation of the Auto Sensor Cooking process (See Fig.6)

1) The shaded columns in the graph indicate when the humidity sensor heater is on.
2) During the first 50 second period there is no microwave activity, and when calculating the T2 time by using the formula below make sure this 50 seconds is subtracted from the T1 time. In other words T1 time starts at the end of the 50 second period. (This 50 second period is needed for the sensor element to stabilize and balance itself to the humidity present before microwave activity starts.)
3) T1 time·····The total amount of time it takes the microwave oven to switch to T2 time after the 50 second period. During this time one of the Auto Sensor programs (A1-A8) will be shown in display.
4) T2 time·····When the steam escapes from the cooking container placed in the oven, the humidity sensor detects it and the microprocessor calculates the balance of cooking time. This T2 time is then shown in the display and begins counting down.

NOTE: **If T1 time is over 60 minutes, oven stops automatically and "FF FF" appears in display window.**

Balance of cooking time (T2 time)

The balance of cooking time which is called T2 time, can be calculated by the following formula.

T2 time (in sec.) =T1 time × K factor

NOTE: **When calculating T2 time, the last digit of T1 time in seconds is cut away. For instance, if the T1 time is 76 seconds, the T2 time will be:**

T2 = 70 × K

Remember, the T2 time starts after the 50 second period. The coefficient K is programmed into the microprocessor memory and they are listed in the following tables along with the P1 and P2 powers. (See Fig. 7 & 8)

NOTE: **When "More" or "Less" pad is selected, the K factor varies as shown in Fig. 7 & 8 resulting in T2 time to be increased or decreased.**

Some examples of calculating the T2 time

Example 1: If the T1 time is measured to be 2 minutes and 45 seconds after the 50 second period, and the Auto program selected is (COOK) A3:

T2 = T1 × K
= 2 min. and 45 sec. × 2.0
= 160 sec. × 2.0
= 320 sec.
= 5 min. and 20 sec.

Example 2: If the T1 time is measured to be 15 minutes and 30 seconds after the 50 second period, and the Auto program selected is (FROZEN-COOK) A2:

T2 = T1 × K
= 15 min. and 30 sec. × 0.9
= 930 sec. × 0.9
= 837 sec.
= 13 min. and 57 sec.

NOTE: **If using a calculator please remember the calculator rounds off in decimal numbers, so the T2 time will come out slightly different than if seconds are changed back to minutes by regular long division. When using a calculator, simply multiply the tenths by 60 to get the correct number of seconds.**
For instance take the T2 time in seconds from Example 2 above. Using the calculator divide 60 into 837 and the quotient will be 13.95. Then multiply 0.95 by 60 and the product will be 57 seconds.

(COOK)

	P1 Power	P2 Power	K factor		
			Standard	More	Less
A1	HIGH	HIGH	0.1	approx. 0.1	approx. 0.1
A2	HIGH	HIGH	1.0	approx. 1.2	approx. 0.8
A3	HIGH	HIGH	2.0	approx. 2.4	approx. 1.6
A4	HIGH	HIGH	0.6	approx. 0.7	approx. 0.5
A5	HIGH	MED	1.5	approx. 1.8	approx. 1.2
A6	HIGH	MED	2.0	approx. 2.4	approx. 1.6
A7	HIGH	LOW	4.0	approx. 4.8	approx. 3.2
A8	HIGH	LOW	2.0	approx. 2.4	approx. 1.6

Fig. 7

(FROZEN — COOK)

	P1 Power	P2 Power	K factor		
			Standard	More	Less
A1	MED	MED	0.7	approx. 0.8	approx. 0.6
A2	MED	SIMMER	0.9	approx. 1.1	approx. 0.7
A3	MED	SIMMER	2.0	approx. 2.4	approx. 1.6
A4	MED	SIMMER	2.7	approx. 3.2	approx. 2.2

Fig. 8

CAUTIONS TO BE OBSERVED WHEN TROUBLESHOOTING

Unlike many other appliances, the microwave oven is high-voltage, high-current equipment. Though it is free from danger in ordinary use, extreme care should be taken during repair.

CAUTION

Servicemen should remove their watches whenever working close to or replacing the magnetron.

1. Check the grounding

Do not operate on a 2-wire extension cord. The microwave oven is designed to be used when grounded. It is imperative, therefore, to make sure it is grounded properly before beginning repair work.

2. Warning about the electric charge in the high voltage capacitor (Fig. 9)

For about 30 seconds after the oven is turned off, an electric charge remains in the high voltage capacitor.
When replacing or checking parts, turn the oven off, wait 30 seconds and short the terminal of the high voltage capacitor (terminal of lead wire from diode) to chassis ground with an insulated jumper lead wire to discharge.

WARNING

There is high-voltage present, with high-current capabilities in the circuits of the high voltage winding and filament winding of the high voltage transformer. It is extremely dangerous to work on or near these circuits with oven energized.

DO NOT measure the voltage in the high voltage circuit including filament voltage of magnetron.

WARNING

Never touch any circuit wiring with your hand nor even with an insulated tool during operation.

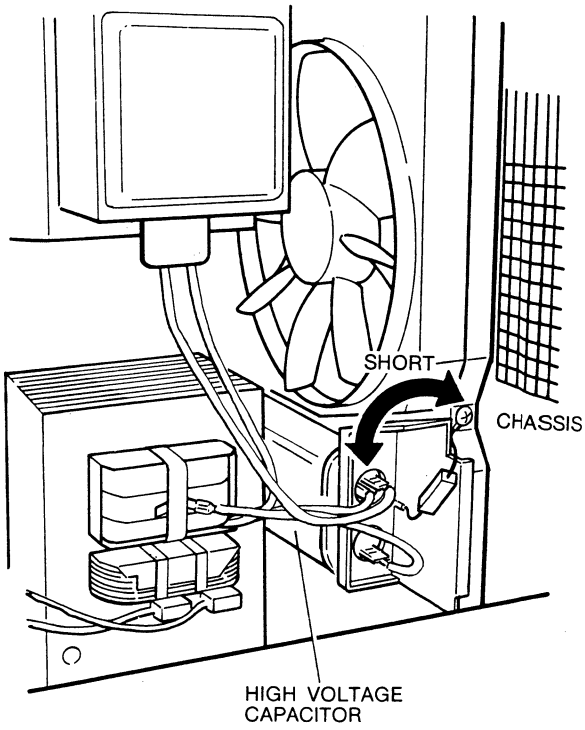
3. When parts must be replaced, remove the power plug from the outlet.

4. Avoid inserting nails, wire, etc. through any holes in the unit during operation.

Never insert a wire, nail or any other metal objects through the lamp holes on the cavity or any other holes or gaps, because such objects may work as an antenna and cause microwave leakage.

5. Confirm after repair

(A) After repair or replacement of parts, make sure that the screws of the oven, etc. are neither loose nor missing.
Microwaves might leak if screws are not properly tightened.
(B) Make sure that all electrical connections are tight before inserting the plug into the wall outlet.



Touch chassis side first then short to the high voltage capacitor terminal.

Fig. 9

DISASSEMBLY AND PARTS REPLACEMENT PROCEDURE

1. Replacement of the magnetron (See Fig. 10)

CAUTION

Servicemen should remove their watches whenever working close to or replacing the magnetron.

(A) Discharge the high voltage capacitor. (See page 21.)
(B) Remove 2 screws holding thermal cutout.
(C) Remove air guide A by removing 1 screw holding it to the magnetron case.
(D) Remove a screw holding the reinforcement bracket C to the magnetron case.
(E) Remove 2 high voltage leads from filament terminals. (Refer paragraph "Removal of Positive Lock Connector" and **Fig. 11.**
(F) Remove 4 nuts holding the magnetron.
NOTE: **To prevent microwave leakage, tighten mounting nuts properly making sure there is no gap between the waveguide and the magnetron.**

CAUTION

When connecting 2 filament lead wires to the magnetron terminals, be sure to connect the lead wires in the correct position. The lead wire of high voltage transformer should be connected to "F terminal" and the lead wire from high voltage capacitor should be connected to "FA terminal". (See **Fig. 10**)

Removal of Positive Lock connector
The positive lock connector is a specially designed loose free connector and you will find this connector in many lead wire connections. To remove this connector, pull the lead wire by pressing an extruded lever in the center of receptacle terminal as shown in **Fig. 11.**

2. Replacement of the fan motor

(A) Remove the magnetron according to the procedures in paragraph 1.
(B) Disconnect 2 lead wires connected to the fan motor.
(C) Remove fan blade from the fan motor shaft by pulling it to front side.
(D) Remove the fan motor by removing 2 screws holding it the fan motor bracket.

3. Disassembly and replacement of the door assembly

(A) Remove 2 bolts holding the upper hinge to the oven assembly.
(B) Open the door assembly and while pulling the door assembly toward you, work the upper hinge out through the hole in the oven assembly. The door assembly will be simply lifted off bottom hinge pin at the same time.
NOTE: Do not lose spacer at the bottom hinge. (**Fig. 12**)
(C) Place a protective pad or soft cloth on working table so as to prevent scratches on door screen B.
(D) Remove 4 screws holding the door C. (**Fig. 12**)
(E) Remove the door C by carefully pulling outward starting from the upper right hand corner.
(F) Separate the door A from door E by carefully freeing the 6 catch hooks on door A while pulling outward. (**Fig. 13**)
(G) Remove door keys, door key lever, door key spring and handle pins from the door E. (**Fig. 14**)
(H) When mounting the door assembly to the oven assembly, be sure to adjust the door assembly parallel to the bottom line of the oven face plate by moving the upper hinge and lower hinge in the direction necessary for proper alignment. (**Fig. 15 & 16**) Also adjust so that the door has no play between the inner door surface and oven frame assembly. If the door assembly is not mounted properly, microwaves may leak from the clearance between the door and the oven.

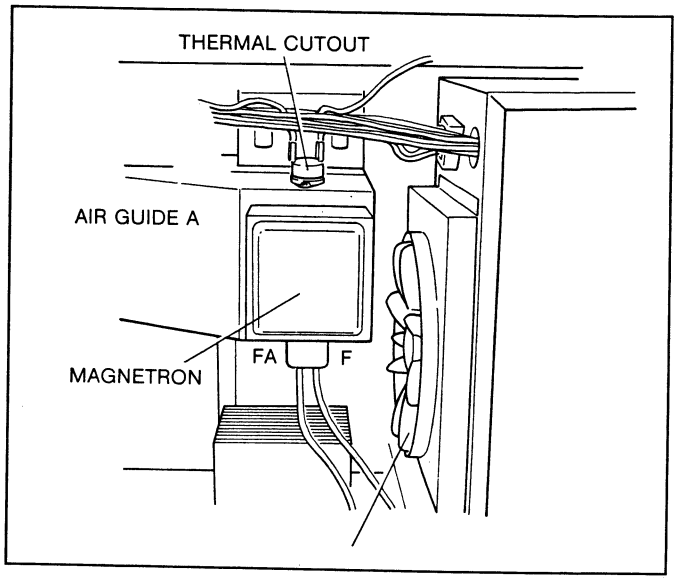


Fig. 10

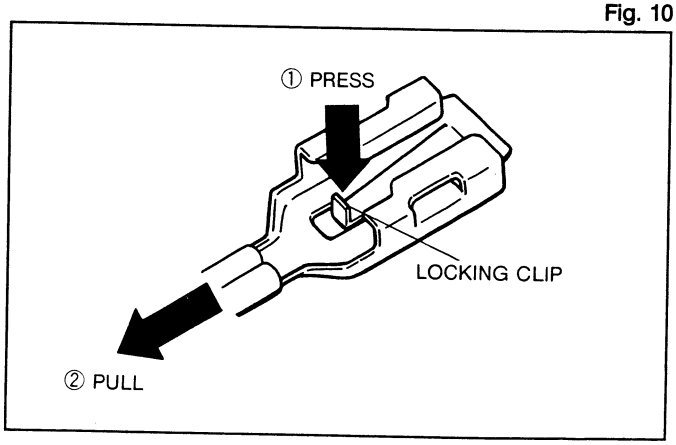


Fig. 11

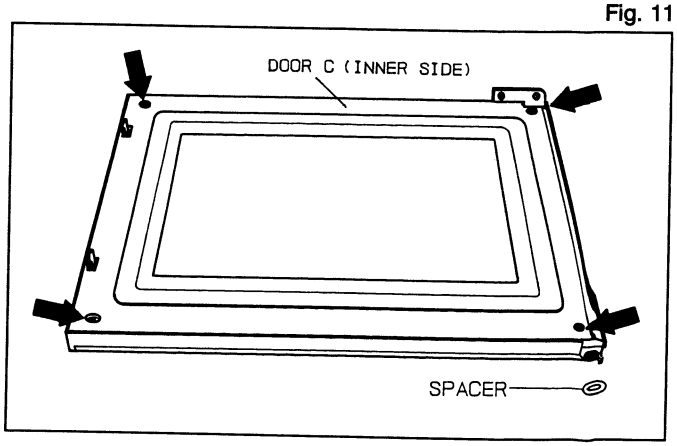


Fig. 12

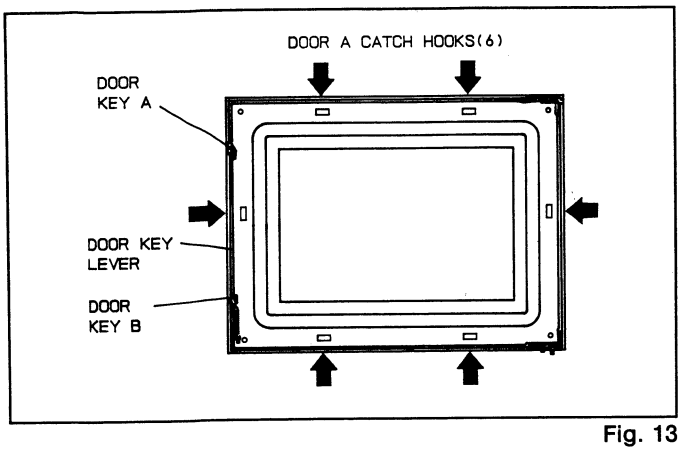


Fig. 13

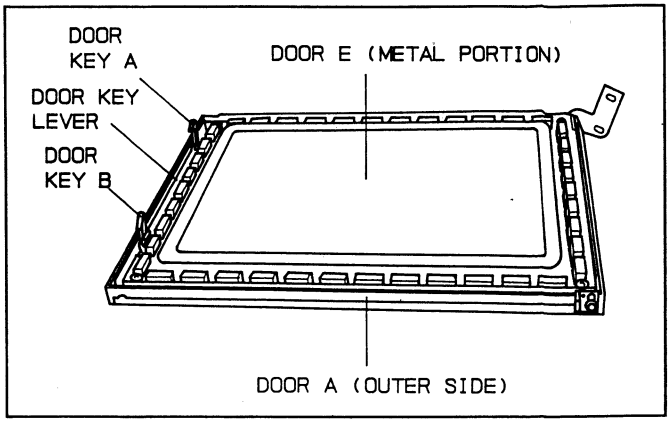


Fig. 14

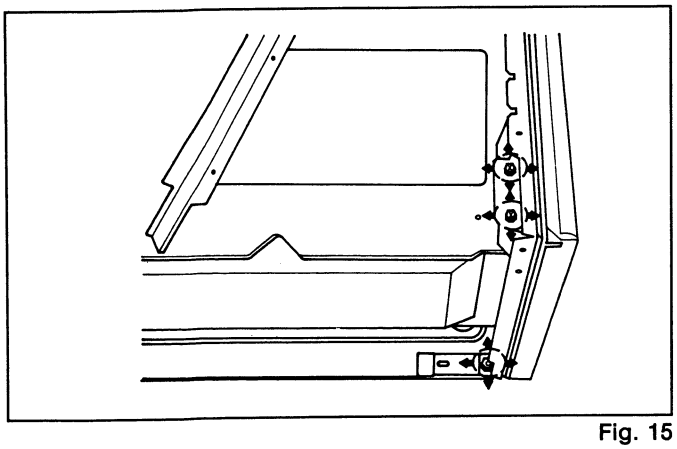


Fig. 15

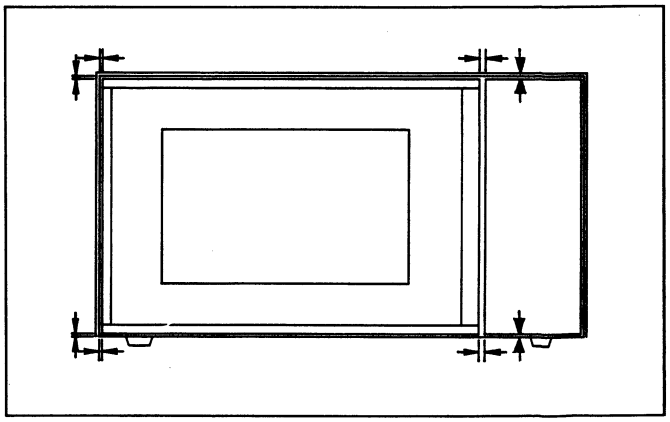


Fig. 16

4. Replacement of turntable motor

(A) Remove the turntable motor cover by breaking off at the 4 spots indicated by arrows with a cutter or the like. **(Fig. 17A)**
(B) Disconnect the turntable motor connector.
(C) Remove the turntable motor by removing 2 screws.
NOTE: To reinstall the turntable motor cover secure it by using the attached 2 screws A. (Fig. 17B)

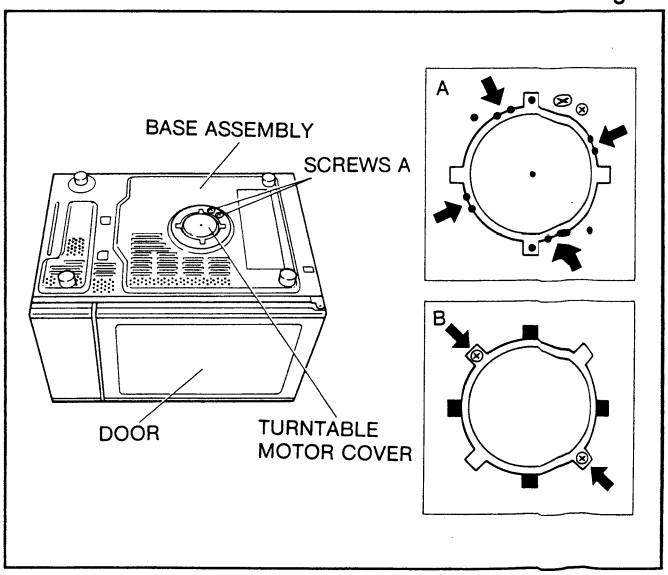


Fig. 17

5. Replacement of the Digital Programmer Circuit (D.P.C.) and membrane key board.

NOTE: Be sure to ground any static electric charge built up in your body before handling the D.P.C..

(A) Unplug the 3-pin connector (CN4) from the D.P.C.. (For NE-691 only)
Caution when removing connector CN4
This connector is a special type which may be very hard to remove just by pulling directly outward. Instead it can be removed easily by simply grasping it by the ends and rocking it side to side while pulling. (See **Fig. 18.**)

(B) Unplug the CN1 and CN2 connector from the D.P.C.

(C) Disconnect all lead wires from power relays A and B.

(D) Remove 2 screws to release the escutcheon base assembly. (**Fig. 19**)

(E) Release CN3 connector's lid of the D.P.C. and pull off the flat cable of the membrane key board.

(F) Remove 3 screws to release the D.P.C. (**Fig. 20A & 20B**)

(G) After removing the defective D.P.C. install the new D.P.C. following the above procedure in reverse.

(H) When replacing the membrane key board, remove 5 screws holding the escutcheon bracket and detach it from escutcheon base. (**Fig. 21**)

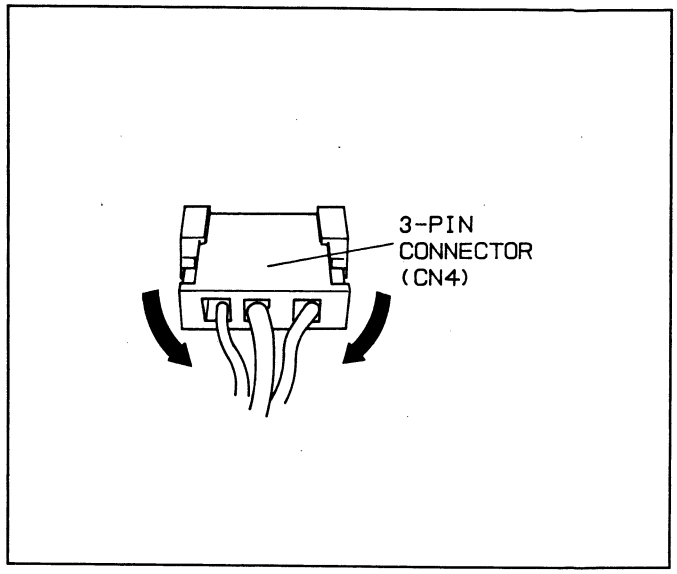


Fig. 18

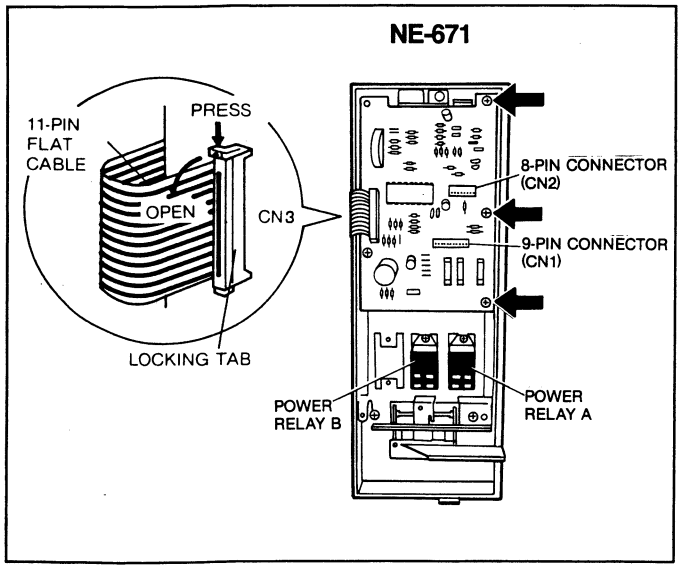


Fig. 20B

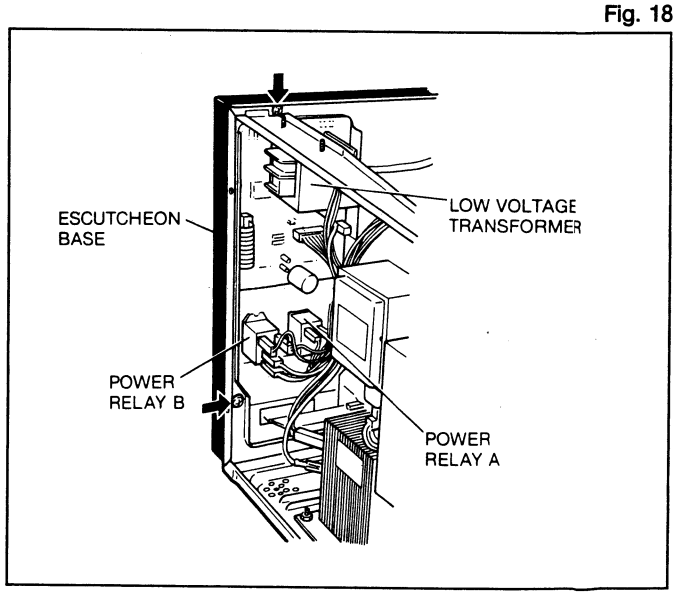


Fig. 19

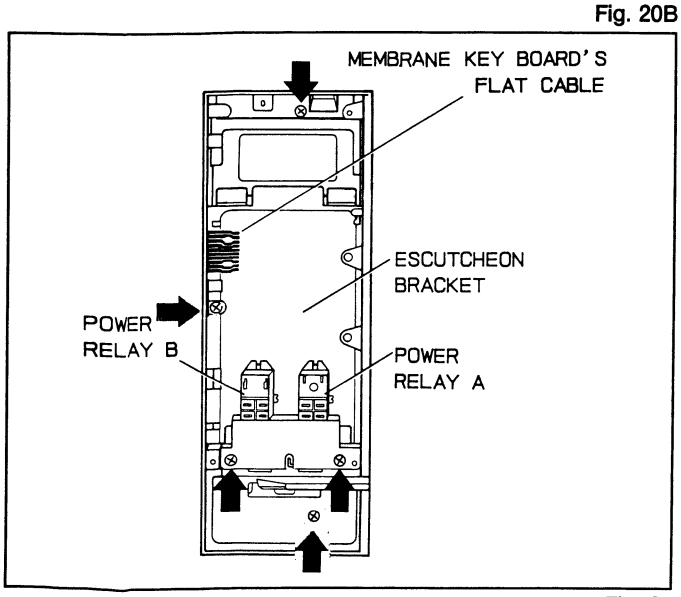


Fig. 21

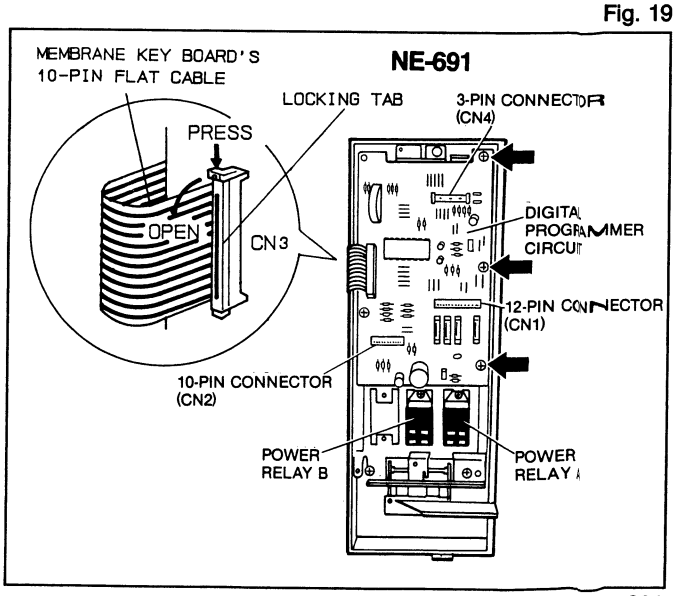


Fig. 20A

COMPONENT TEST PROCEDURE

CAUTION

1. High voltage is present at the high voltage terminal of the high voltage transformer during any cook cycle.
2. It is neither necessary nor advisable to attempt measurement of the high voltage.
3. Before touching any oven components, or wiring, always unplug the oven from its power source and discharge the high voltage capacitor. (See page 21.)

1. High voltage transformer (refer to Fig. 22)

(A) Remove connections from the transformer terminals and check continuity.
(B) Normal (cold) resistance readings should be as follows:
Secondary winding ····· Approx. 60Ω ~ 90Ω
Filament winding ····· Approx. 0Ω
Primary winding (0V ~ 240V) ····· Approx. 0Ω ~ 3Ω

2. High voltage capacitor

(A) Check continuity of capacitor with ohmmeter on highest OHM scale.
(B) A normal capacitor will show continuity for a short time, and then indicate 9MΩ once the capacitor is charged.
(C) A shorted capacitor will show continuous continuity.
(D) An open capacitor will show constant 9MΩ.
((Due to internal 9MΩ resistor))
(E) Resistance between each terminal and chassis should be infinite.

3. Diode

(A) Isolate the diode from the circuit by disconnecting the leads.
(B) With the ohmmeter set on the highest resistance scale, measure the resistance across the diode terminals. Reverse the meter leads and again observe the resistance reading. Meter with 6V, 9V or higher voltage batteries should be used to check the front-to-back resistance of the diode, otherwise an infinite resistance may be read in both directions.
A normal diode's resistance will be infinite in one direction and several hundred KΩ in the other direction.

4. Magnetron (Fig. 23)

Continuity checks can only indicate an open filament or a shorted magnetron. To diagnose for an open filament or shorted magnetron
(A) Isolate magnetron from the circuit by disconnecting the leads.
(B) A continuity check across magnetron filament terminals should indicate one ohm or less.
(C) A continuity check between each filament terminal and magnetron case should read open.

5. Membrane key board (Membrane switch assembly) (Fig. 24 & 25)

Check continuity between switch terminals, by pressing an appropriate pad on the key board.
The contacts assignment of the respective pads on the key board is as shown in **Fig. 24 & 25**.
NOTE: **When checking continuity, use at least X1000 range on ohmmeter as normal contacts resistance reads approximately 10 to 50 kiloohms.**

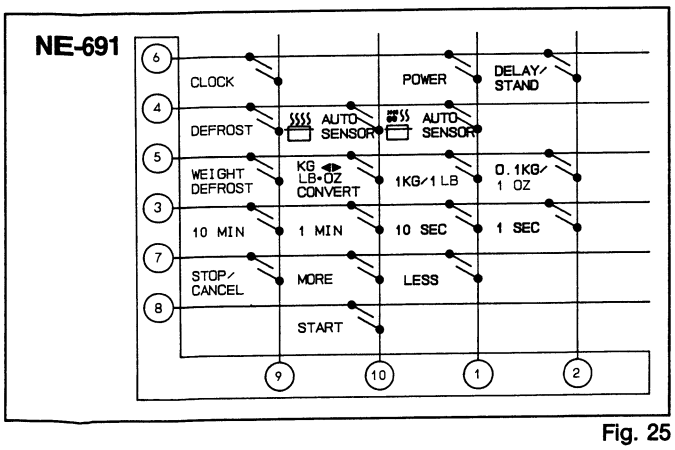
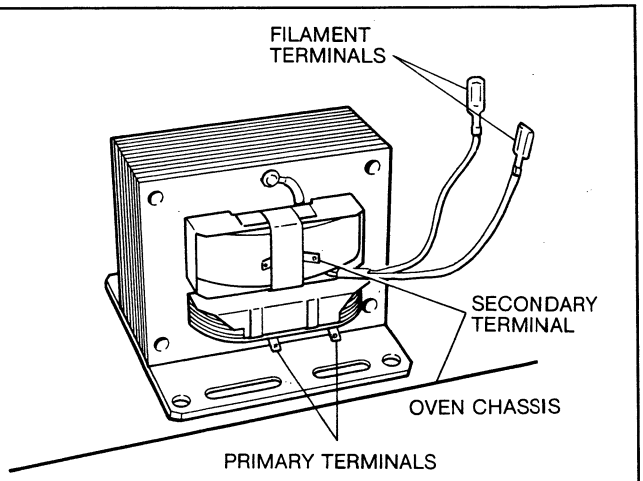
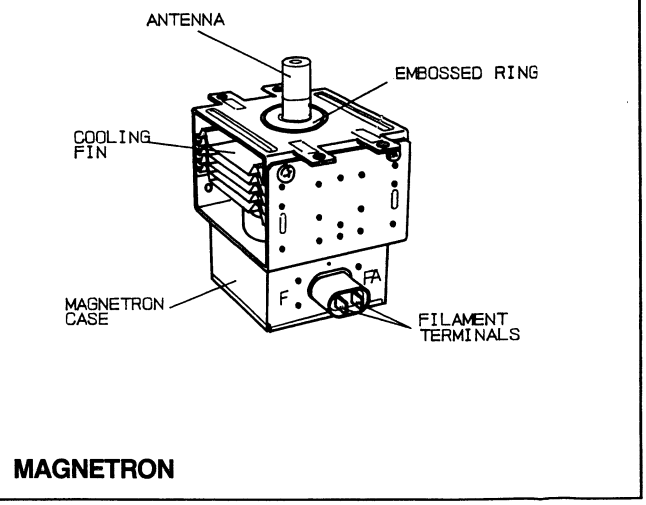


Fig. 25



HIGH VOLTAGE TRANSFORMER

Fig. 22



MAGNETRON

Fig. 23

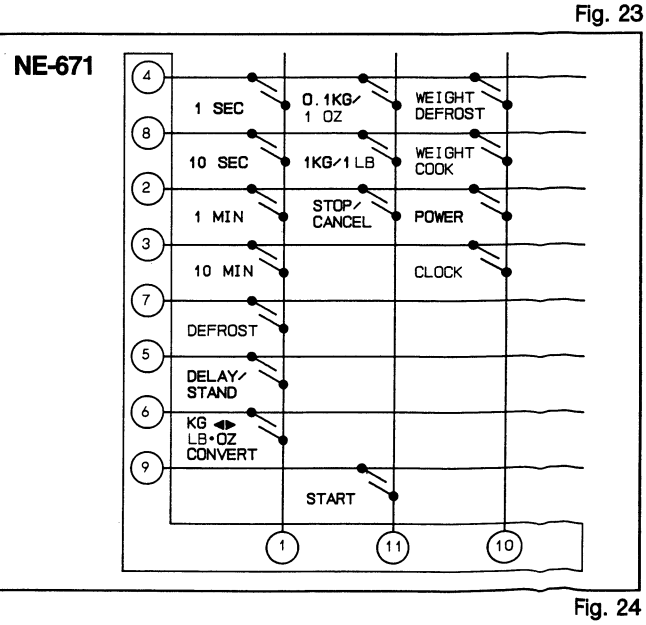


Fig. 24

6. Humidity Sensor and digital programmer circuit (Fig. 26) (For NE-691 only)

CAUTION

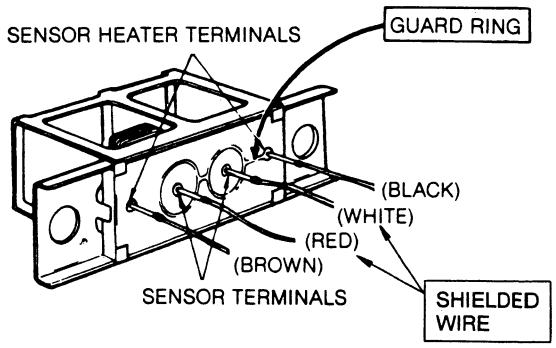
Do not touch any parts of the circuitry on the digital programmer circuit since static electric discharge may damage this control panel.
Always ground yourself while working on this panel to discharge any static charge built up in your body.

(A) Check across sensor heater terminals. Normal cold resistance should read approx. 6 ohm.

(B) In order to determine if the Auto Sensor function of the digital programmer circuit is in working order or not, do the following test.
1) Place a water load in the oven.
2) Unsolder 2 shielded wires connected to sensor terminals.
3) Tap Auto Sensor Cook Control Pad twice to set auto sensor cooking at A2. and tap Start Pad
4) About 10 seconds after Start Pad is touched, short shielded wires for 5 seconds and then remove them. Before shorting the shielded wires you can watch the sensor heater glow red.
5) The oven lamp will dim a little, about 50 seconds after the Start Pad is tapped. This indicates that magnetron has started oscillation.
6) After approx. *10 seconds (T1 TIME), short the shielded wires again.
7) A2 should disappear in display window and following digits (see chart) should appear indicating **additional cooking time (T2 TIME). The time should start to count down and oven should shut off when the time has elapsed.

* T1 TIME	** T2 TIME (Additional Cooking Time)
10 sec.~19 sec.	10 sec.
20 sec.~29 sec.	20 sec.

The Auto Sensor function in the digital programmer circuit is in working order if above condition is obtained.



HUMIDITY SENSOR ELEMENT

Fig. 26

MEASUREMENTS AND ADJUSTMENTS

1. Adjustment of safety switch A

(A) When mounting the safety switch A to the door hook A, mount the safety switch A to the door hook A as shown in **Fig. 27.**

NOTE: **No specific adjustment during installation of safety switch A to the door hook A is necessary.**

(B) When mounting the door hook A assembly to the oven assembly, be sure to adjust the door hook A assembly by moving in the arrow direction so that the oven door will not have any play in it. **(Fig. 28)**
Check for play in the door by pulling the door.
Make sure that the latch key positions correctly during adjustment. Also make sure that the latch key moves smoothly after adjustment is completed. Securely tighten the screws holding the door hook assembly to the oven assembly.

2. Adjustment of safety switch B, door signal switch and short switch

(A) When mounting the safety switch B, door signal switch and short switch to the door hook B assembly, mount the safety switch B, door signal switch and short switch to the door hook B assembly as shown in **Fig. 29.**

NOTE: **No specific adjustment during installation of safety switch B, door signal switch and short switch to the door hook B is necessary.**

(B) When mounting the door hook B assembly to the oven assembly, adjust the door hook B by moving it in the direction of arrow in **Fig. 28** so that the oven door will not have any play in it. Check for play in the door by pulling the door assembly. Make sure that the latch key moves smoothly after adjustment is completed. Securely tighten the screws holding the door hook B assembly to the oven assembly.

3. Measurement of the magnetron's output

The power output of the magnetron can be measured by performing a simple water temperature rise test.
Equipment needed for the Test:
*Two 1 litre beakers
*One glass thermometer

NOTE: **Check the line voltage under load. Low voltage will lower the magnetron output. Make all temperature and time tests with accurate equipment.**

(A) Fill the two 1 litre beakers with water and mark one A and one B.
(B) Stir the water in each beaker with the thermometer and record each beaker's temperature.
Beaker A's temperature = T1A
Beaker B's temperature = T1B
(C) The average value (T1) of T1A and T1B is calculated as follows:

$$T1 = \frac{T1A + T1B}{2}$$

(D) Set the oven for "High power (600W)" and place both beakers on the centre of the glass cook plate. Heat the water for exactly two minutes.
(E) When the heating is finished, again stir the water with the thermometer and measure the temperature rises as T2A and T2B.
(F) The average value (T2) of T2A and T2B is calculated as follows:

$$T2 = \frac{T2A + T2B}{2}$$

(G) Subtract T1 from T2. This will give you the temperature rise.
(H) The normal temperature rise for this model is 7.7° to 9.9°C at the "High" power position.
• If no temperature rise is noted, refer to the "TROUBLESHOOTING GUIDE"

NOTE : **In order to determine (not to measure the output power) if oven oscillates normally or not, you may conduct this test by heating one litre water for one minute. In this case, the temperature rise will be small due to microwave characteristic but should be over 6.5°C.**

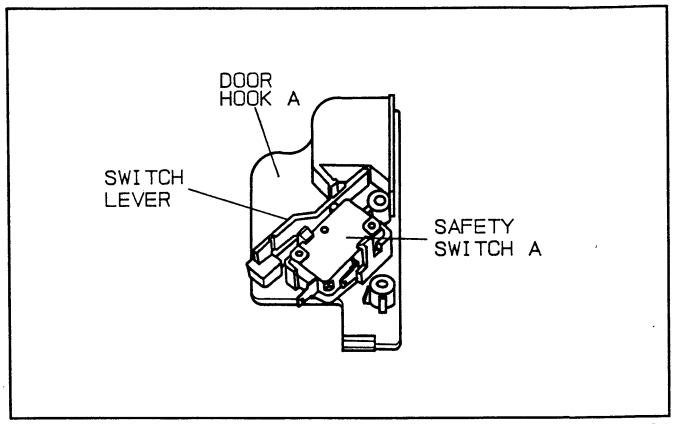
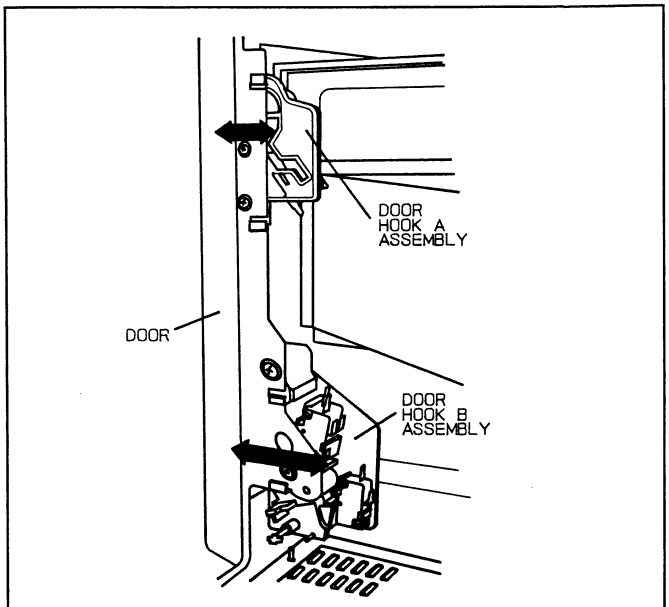


Fig. 27



NOTE : **When adjusting the door hooks, remove screws mounting escutcheon base assembly and lean the upper portion toward front.**

Fig. 28

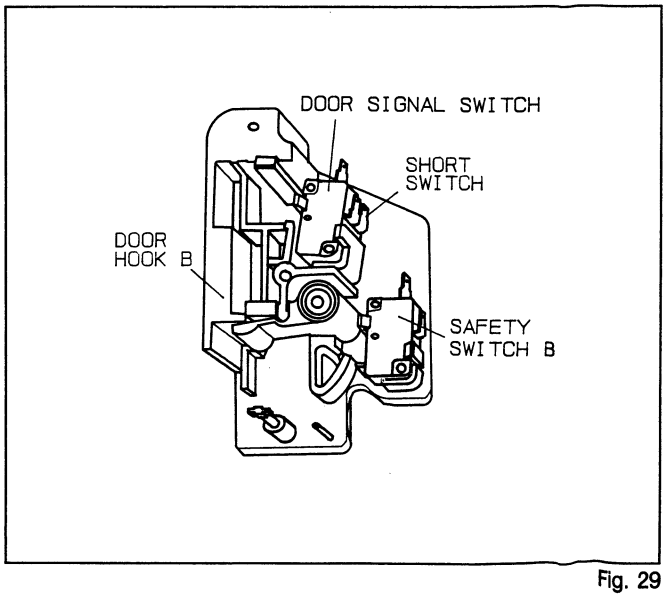


Fig. 29

TROUBLESHOOTING GUIDE

CAUTION

1. Check grounding before checking for trouble.
2. Be careful of the high voltage circuit.
3. Discharge high voltage capacitor. (See page 21.)
4. When checking the continuity of the switches or the high voltage transformer, disconnect one lead wire from these parts and then check continuity with the AC plug removed. To do otherwise may result in a false reading or damage to your meter.
5. Do not touch any parts of the circuitry on the digital programmer circuit since static electric discharge may damage this control panel.
   Always touch yourself to ground while working on this panel to discharge any static charge in your body.
6. When disconnecting a plastic connector from a terminal, you must hold the plastic connector instead of the lead wire and then disconnect it, otherwise lead wire may be open or the connector cannot be removed.

First of all operate the microwave oven following the correct operating procedures described on pages 3 ~ 14 in order to find the exact cause of any trouble.

[TROUBLE 1] The following visual conditions indicate a probable defective digital programmer circuit (D.P.C.) or membrane key board (membrane switch assembly).

A. In case of following conditions, D.P.C. is defective.

1. Incomplete segments.
   (A) Segments missing.
   (B) Partial segments missing.
   (C) Digit flickering other than normal fluorescent slight flickering.
   (D) Colon does not turn on or does not blink when the clock pad is tapped.
2. A distinct change in the brightness of one or more numbers in the display.
3. One or more digits in the display not on when they should be.
4. Wrong or no power indicator light for power level selected.
5. Specific numbers (for example 2 or 3) will not display.
6. Display does not count down with time cooking or when using display as a timer.
7. Display does not count up with clock operation.
8. Oven is programmable and cooks normally but no display shows.
9. Display obviously jumps in time while counting down or up.
10. Display counts down noticeably too fast while cooking.
11. Display cannot shift from the first stage cooking to the second stage cooking even though Two Stage Cooking is programmed.
12. Display does not stop counting down with time cooking even when Stop/Cancel Pad is tapped.
13. Time of day does not reappear when cooking is finished.

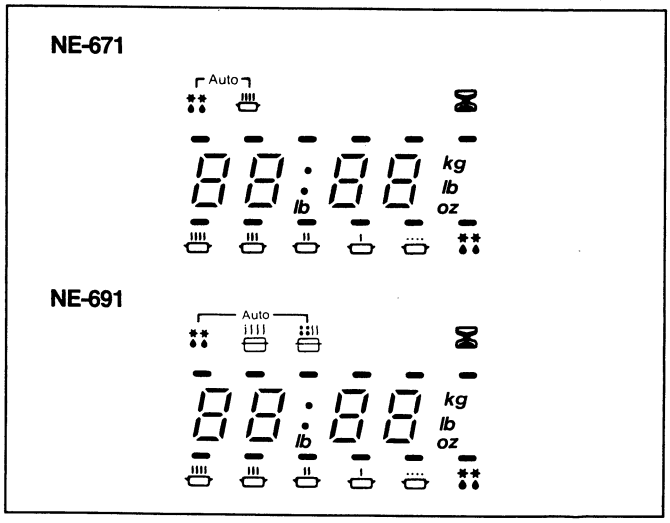


Fig. 30

B. In case of following conditions, either D.P.C. or membrane switch is defective.

CHECK	RESULT	CAUSE	REMEDY
1. Clock set cannot be programmed at all.			
Check continuity of membrane switch with clock pad tapped. For NE-671···between terminals 3 and 10 For NE-691···between terminals 6 and 9	No continuity	Defective membrane switch	Replace
	Continuity	Defective DPC	Replace
2. Some inputs cannot be programmed.			
Check continuity of membrane switch (Refer to page 25 for the test procedures of membrane switch)	Some pads have no continuity	Defective membrane switch	Replace
	Normal	Defective DPC	Replace
3. Display indicates a number or figure different from one touched. Random programming when pressing other than touch pads or without pressing any at all. (intermittently)			
Replace membrane switch and recheck	Everythings works as specified	Defective membrane switch	Replace
	Still have trouble	Defective DPC	Replace

[TROUBLE 2] Oven does not operate at all; Display window does not indicate any figures and no program of any pads will be accepted.

1. 8A fuse has been blown.

CHECK	RESULT	CAUSE	REMEDY
Check continuity of short switch with door closed	Continuity	Malfunction of short switch	Replace
Check continuity of safety switch B's contacts with door opened	Continuity	Shorted contacts of safety switch B	Replace
Disconnect one side of lead wire connected from high voltage transformer to the high voltage capacitor and operate the unit.	Normal	Defective high voltage capacitor	Replace
	8A fuse again blows	Defective high voltage transformer	Replace

CHECK	RESULT	CAUSE	REMEDY

2. Outlet has proper voltage. Fuse is not open.

Check continuity of thermal cutout	No continuity	Defective thermal cutout	Replace
Check continuity of power supply cord	No continuity	Open power supply cord	Replace
Disconnect lead wire of L.V.Transformer primary side and check the continuity	Infinity	Open winding of low voltage transformer	Replace
	Approx. 300~340Ω (Normal) (NE-671) Approx. 75~95Ω (Normal) (NE-691)	Defective DPC	Replace

[TROUBLE 3] Display shows all figures selected, but oven does not start cooking even though desired program and time are set and start pad is tapped. (Cooking time counts down.)

1. Oven lamp, turntable and fan motor do not turn on.

CHECK	RESULT	CAUSE	REMEDY
Check DC voltage being applied to power relay A coil terminals with start pad tapped. NOTE 1	Approx. 18V DC	Faulty contacts of power relay A or open relay coil (NOTE 2)	Replace
	0 volts	Defective DPC	Replace

NOTE 1: During this trouble, the oven lamp does not turn on when door is opened.

2. Oven lamp turns on but turntable and fan motor do not.

CHECK	RESULT	CAUSE	REMEDY
Check continuity of safety switch B with door closed.	No continuity	Malfunction of safety switch B	Adjust or replace
	Continuity	Loose connection of safety switch B's wiring	Repair

[TROUBLE 4] No microwave oscillation even though fan motor rotates.

CHECK	RESULT	CAUSE	REMEDY
Check if 240 V AC is applied to the primary side of high voltage transformer	Yes, 240 V is applied	Please proceed to troubleshooting number 2 of this TROUBLE	
	No		
Check DC voltage being supplied to power relay B coil (NOTE 2)	0 volts	Defective digital programmer circuit	Replace
	Normal	Faulty contacts of power relay B or open relay coil	Replace
		Malfunction of safety switch A	Adjust or replace

NOTE 2: Disconnect two lead wires connected to the power relay B coil.
Set power at High and set any time.
Normal digital programmer circuit should read approx. 18V DC continuously.

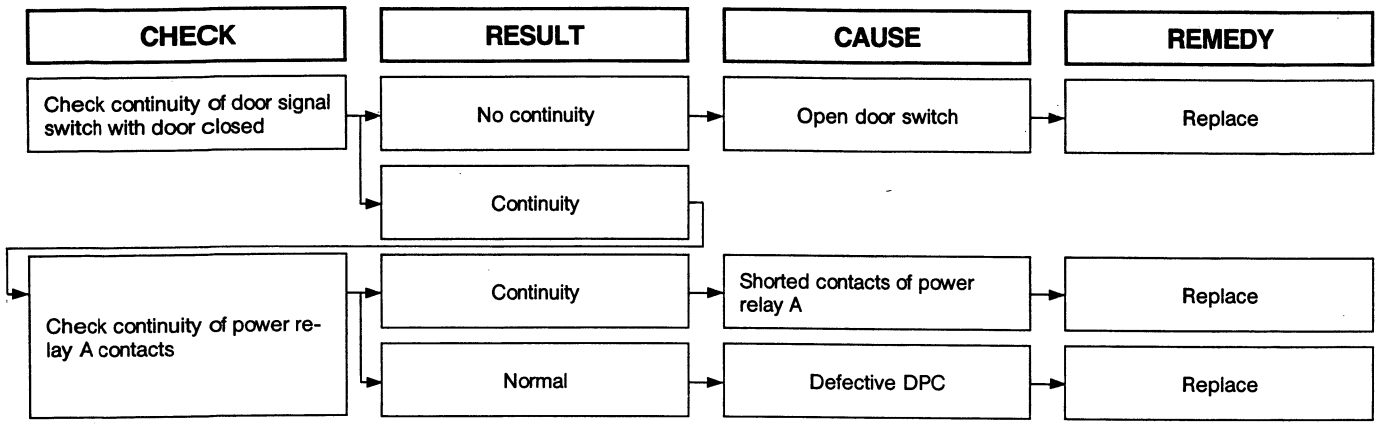
CHECK	RESULT	CAUSE	REMEDY
2. 240V AC is applied to primary side of high voltage transformer.			
Disconnect one lead wire connected to filament terminal of magnetron and check the continuity of magnetron's filament	No continuity	Defective magnetron	Replace
Disconnect both 2 lead wires connected to filament terminals of magnetron and check the continuity between filament and magnetron case	Continuity	Shorted filament with anode of magnetron	Replace magnetron
Check the continuity of white high voltage lead wire (H.V.capacitor—magnetron)	No continuity	Open high voltage lead wire NOTE 3	Replace high voltage lead wire (Refer No. W3) and also magnetron Refer Figure (WIRING MATERIAL) on page 37.
Check the front-to-back resistance of the diode	Continuity of both directions	Shorted diode	Replace
Check the continuity of the high voltage transformer primary winding (0—240V)	No continuity	Open winding of the high voltage transformer	Replace
Check the insulation of filament winding of high voltage transformer	Poor insulation	Defective high voltage transformer	Replace
Check the continuity of filament winding of H.V.Transformer	No continuity	Defective H.V.Transformer	Replace
	Normal	Aging change of magnetron	Replace magnetron

NOTE 3: Unlike previous models, no protector is provided on lead wire W3.
When magnetron filament is short-circuited, this W3 lead wire will be burnt and act as a protector.
When this lead wire is open, replace together with magnetron.

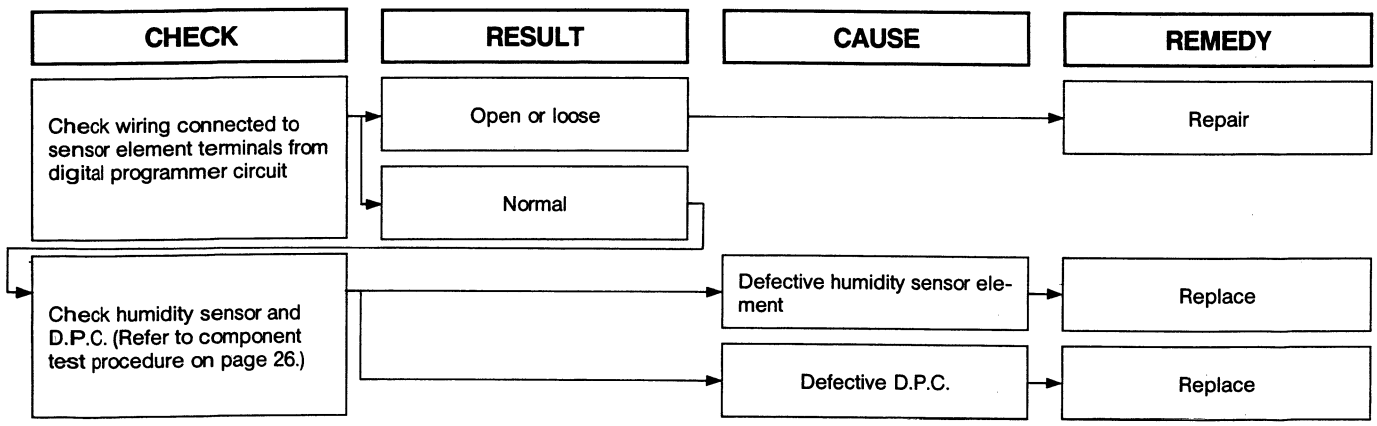
[TROUBLE 5] Microwave output power is low. First of all, check if output is really low by following "Measurement of microwave output" on page 27.

CHECK	RESULT	CAUSE	REMEDY
Check the power source voltage with magnetron oscillating.	Lower than 220 volts (in the 240 volts area)	Decrease in power source voltage	Inform customer of required power voltage
	Normal		
Check the timing periods of the 18V DC being applied to the power relay B coil (Refer to page 17 for the timing periods of the power relay B)	Abnormal	Defective digital programmer circuit	Replace
	Normal	Aging change of magnetron	Replace depending on the result of output test

[TROUBLE 6] Oven lamp and fan motor turn on when power supply cord is plugged into wall receptacle.

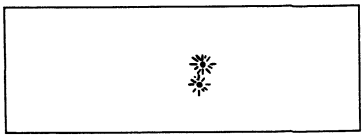
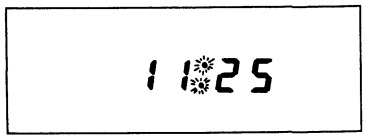
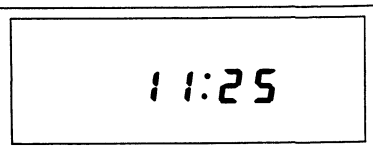


[TROUBLE 7] Microwave oven does not operate normally, when auto sensor cooking is selected. (For NE-691 only)

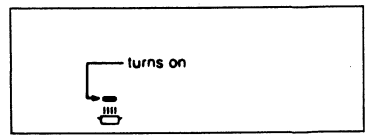
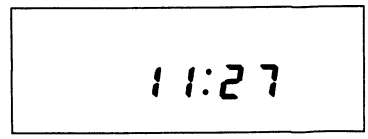
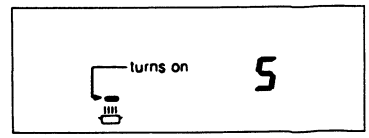
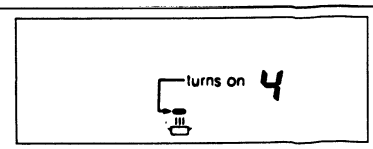
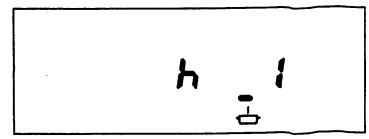
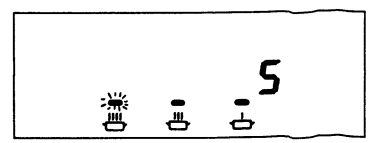
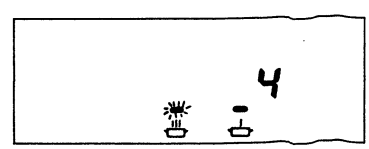


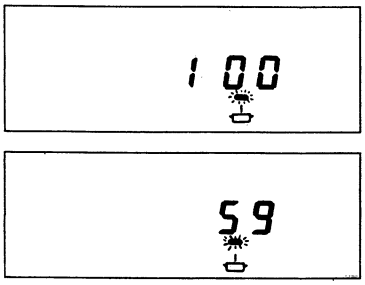
DIGITAL PROGRAMMER CIRCUIT TEST PROCEDURE

1. Clock Setting

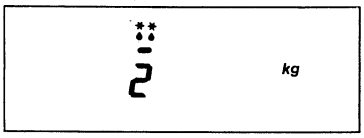
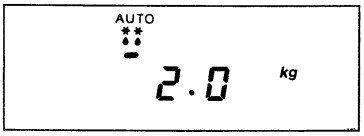
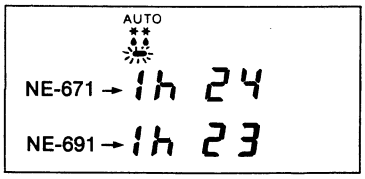
STEP	OPERATION	FUNCTION	DISPLAY
1	Plug the power supply cable into wall receptacle.	• Colon starts blinking.	
2	Enter time of day (TOD) by tapping appropriate number pads. Example : To Set 11 : 25 • Tap 10 min pad once • Tap 1 min pad once • Tap 10 sec pad twice • Tap 1 sec pad 5 times	• Numbers tapped are displayed in the display window. • Colon keeps blinking.	
3	Tap Clock Pad.	• Colon stops blinking and stays on. • TOD has now been registered into the digital programmer circuit and will count up by minutes.	

2. Time Cooking/Three Stage Cooking

STEP	OPERATION	FUNCTION	DISPLAY
1	Place a water load in the oven.		
2	Tap Power Pad.(Example : Tap power select pad once for high power setting.)	• Clock time disappears. • "HIGH" ( ) power indicator light turns on.	
3	Tap Stop/Cancel Pad.	• The display window will show TOD again.	
4	Select "HIGH" ( ) power and set for 5 seconds by tapping the appropriate pads. (1st stage)	• Clock time disappears. • "HIGH" ( ) Power indicator light turns on. • Display window shows "5".	
5	Set MEDIUM ( ) power for 4 seconds. (2nd stage)	• First stage cooking time "5" and "HIGH" ( ) power indicator light disappear. • "MEDIUM" ( ) power indicator light turns on. • Display window shows "4".	
6	Set SIMMER ( ) power for 1 minute. (3rd stage)	• Second stage cooking time "4" and "MED" ( ) power indicator light disappear. • "SIMMER" ( ) power indicator light turns on. • Display window shows "h 1": **NOTE: When SIMMER power is selected, h meaning hour appears in display window and cooking time is shown in hours and minutes.**	
7	Tap Start Pad. (1st stage)	• Oven light turns on. • Microwave activity starts. • Third stage cooking time disappears. • SIMMER power indicator light stays on. • HIGH and MEDIUM power indicator lights turn on. • Turntable begins to rotate. • First stage cooking time "5" appears and counts down by seconds. • "HIGH" (1st stage) power indicator light begins to blink.	
8	(2nd stage)	• After completing 1st stage program, oven automatically switches to 2nd stage. • HIGH (1st stage) power indicator light turns off. • MEDIUM (2nd stage) power indicator light starts to blink. • SIMMER (3rd stage) power indicator light remains on. • Display window indicates "4" and starts counting down by seconds.	

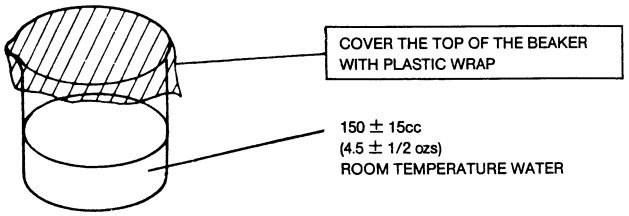
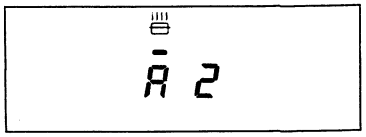
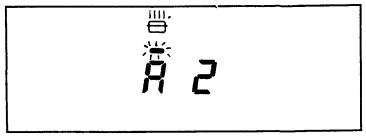
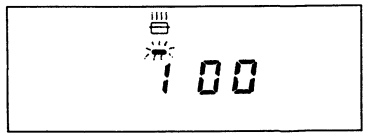
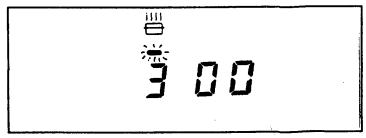
STEP	OPERATION	FUNCTION	DISPLAY
9	(3rd stage)	• After completing 2nd stage program, oven automatically switches to 3rd stage. • MEDIUM (2nd stage) power indicator light turns off. • SIMMER (3rd stage) power indicator light starts to blink. • Display indicates "1 00" and starts counting down by seconds.	
10	When third stage cooking ends, oven beeps five times and shuts off automatically.		• TOD appears in display window.

3. Auto Weight Defrost

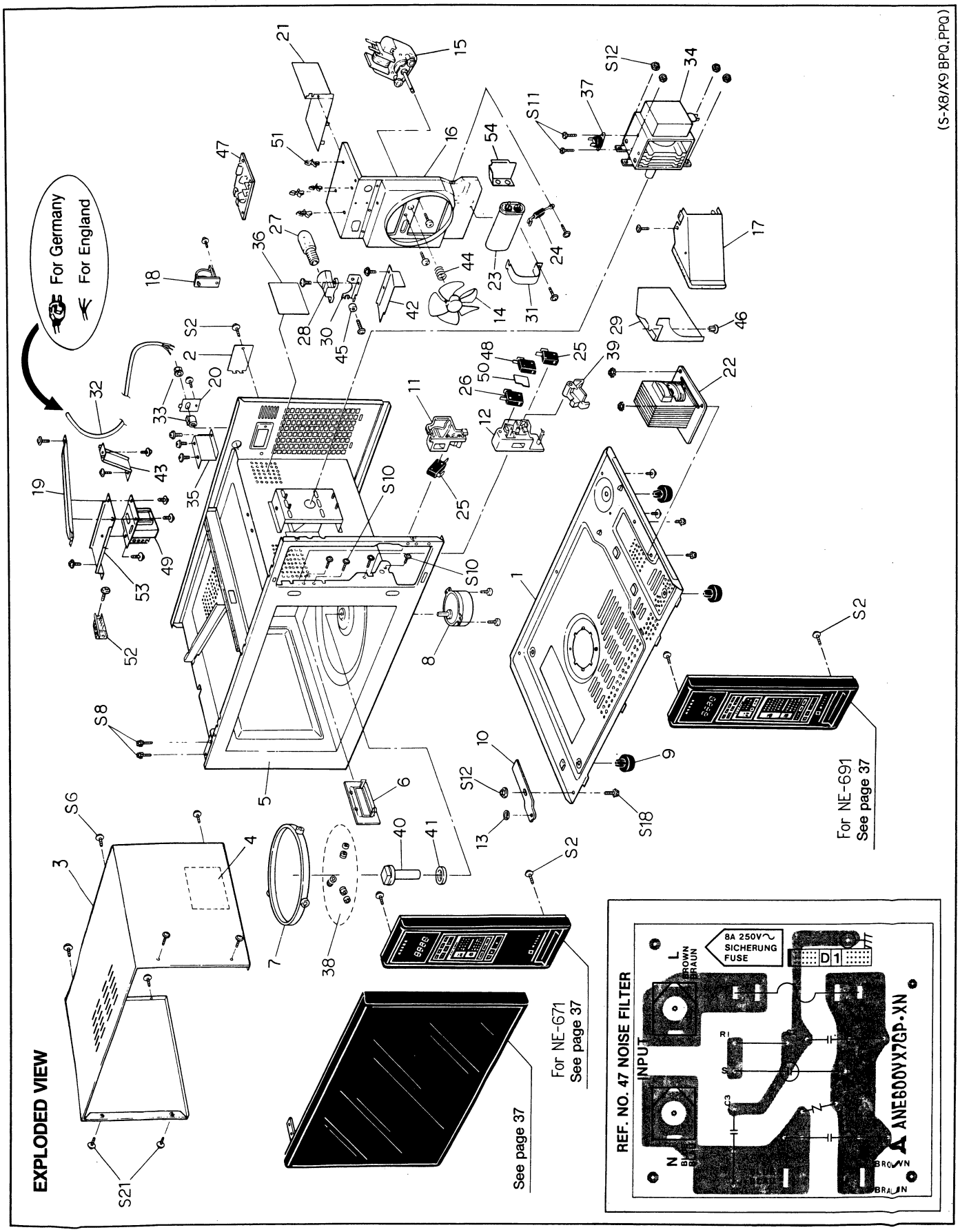
STEP	OPERATION	FUNCTION	DISPLAY
1	Tap Auto Weight Defrost Pad 2 times to select Defrost Category 2.	• Clock time disappears. • Category number "2" appears in the display window. • Auto Weight Defrost indicator light turns on. • "kg" appears in the display window.	
2	Set the weight to 2 kg by tapping 1.0 kg pad twice.	• Category number "2" disappears and the weight selected appears in the display window.	
3	Tap Start Pad.	• Oven light turns on. • Microwave defrosting begins. • Auto Weight Defrost indicator light begins to blink. • Turntable begins to rotate. • Weight in display window disappears. • Defrosting time "1h 24" for NE-671 or "1h 23" for NE-691 appears and counts down. **NOTE:The defrosting time appears in the display may slightly vary between models NE-671 and NE-691. See time charts (Fig. 5A & Fig. 5B) for applicable defrosting time by weight.**	
4	Tap Stop/Cancel Pad 2 times.	• Oven shuts off. • The display window will show TOD again.	

6. Auto Sensor Cooking (For NE-691 only)

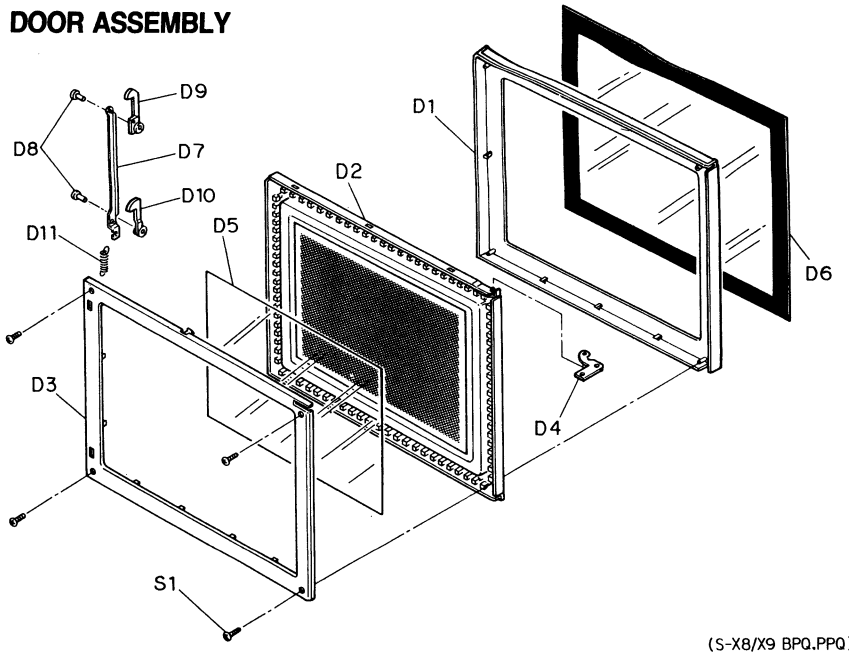
NOTE: Make sure that the outer panel is installed before Auto Sensor Cooking Test, since Auto Sensor function does not operate properly without the outer panel.

STEP	OPERATION	FUNCTION	DISPLAY
1	Pour 150 ± 15cc (4.5 ± 1/2 ozs) of room temperature water in a beaker, securely cover the top of the beaker with plastic wrap and place the beaker in the center of the oven.		
2	Tap Auto Sensor "Cook" Pad 2 times.	• Clock time disappears. • "A2" appears in display window. • "Auto Sensor Cook" ind. light turns on.	
3	Tap Start Pad.	• "Auto Sensor Cook" ind. light starts to blink. • Oven lamp turns on. • Fan motor and turntable start rotating. • Oven lamp will dim a little, about 50 seconds after Start Pad is tapped. This indicates that magnetron has started oscillation.	
	The humidity sensor detects steam about 2 to 4 minutes after the Start Pad is tapped. Auto Sensor Cooking (T1) automatically switches to time cooking (T2). "A2" disappears with beep sounds and the remainder of cooking time appears in display window. NOTE: **Cooking time will vary depending on the water temperature, the shape of beaker or the power source voltage.**	• Auto Sensor Cooking automatically switches to time cooking. • "A2" disappears, two beeps sound, and 1 00 to 3 00 (1 minute to 3 minutes) appears in the display window as balance of cooking time.	  NOTE : If 1 00 to 3 00 (1 min to 3 min) appears, AUTO SENSOR FUNCTION is normal.
		• When the balance of cooking time has elapsed, oven stops and beeps five times. • "Auto Sensor Cooking" ind. light and oven lamp turn off. • TOD reappears in the display window. • Finally check to make sure if TOD is correct.	

EXPLODED VIEW AND PARTS LIST

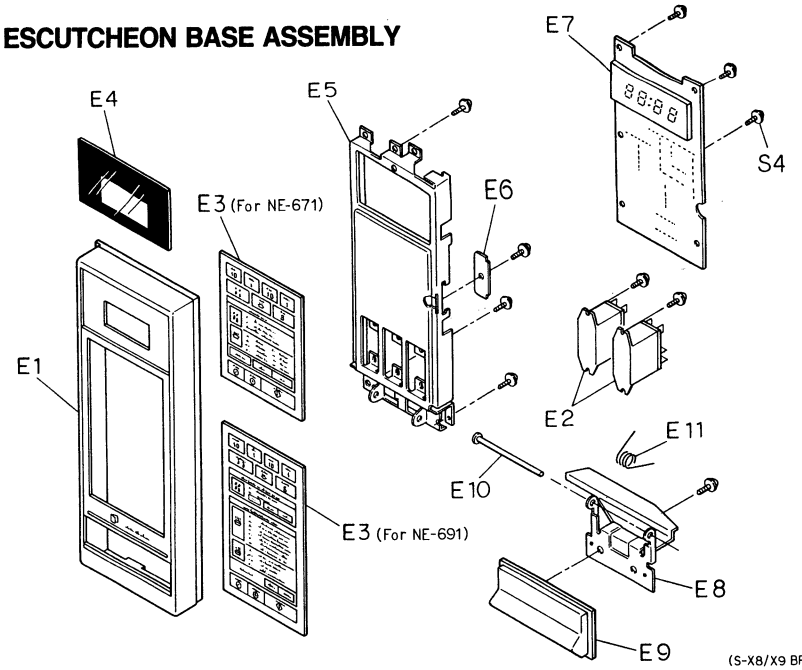


DOOR ASSEMBLY



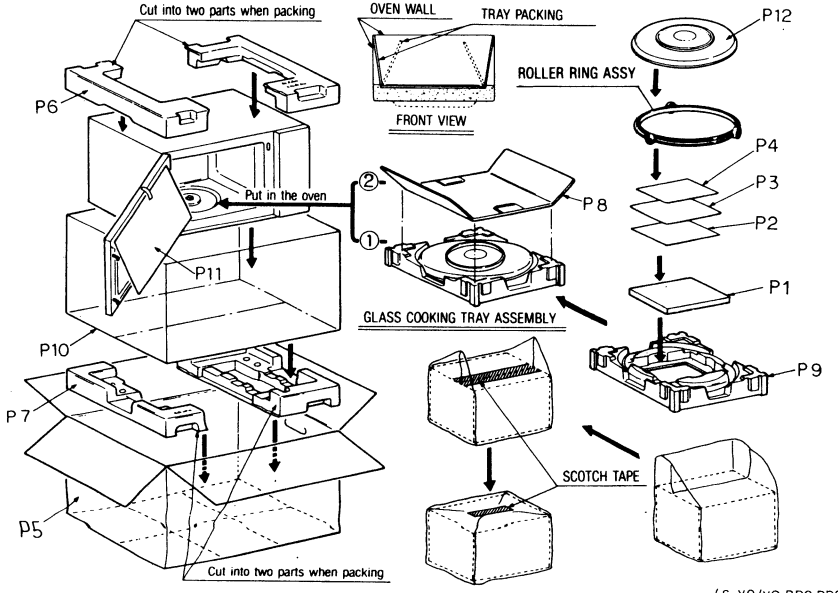
(S-X8/X9 BPQ.PPQ)

ESCUTCHEON BASE ASSEMBLY



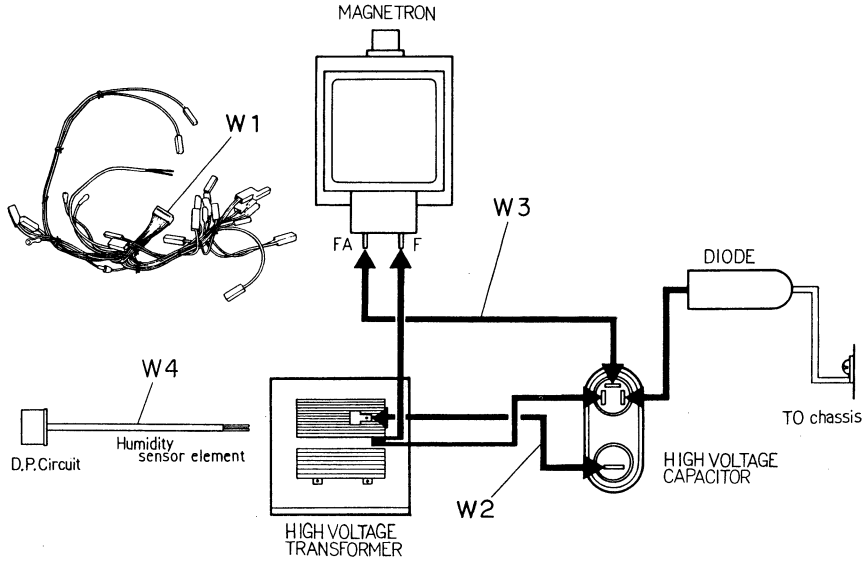
(S-X8/X9 BPQ.PPQ)

PACKING AND ACCESSORIES



(S-X8/X9 BPQ.PPQ)

WIRING MATERIAL



(S-X8/X9 BPQ.PPQ)

PARTS LIST (NE-671, NE-691)

NOTE 1: When ordering replacement part(s), please use part number(s) shown in this parts list. Do not use description of the part.
2: Important safety notice:
Components identified by ⚠ mark have special characteristics important for safety.
When replacing any of these components, use only manufacturer's specified parts.

Ref. No.		Part No.	Part Name & Description	Pcs/ Set	Remarks
1	⚠	ANE1001X70AP	Base	1	
2		ANE1060X00AP	Lamp cover assy	1	
3		ANE1009X70BP	Outer panel	1	(NOTE 3)
4		ANE0001X80BP	Schematic diagram	1	For NE-671
		ANE0001X90BP	Schematic diagram	1	For NE-691
5	⚠	ANE201AX80BP	Oven assy	1	
6		ANE2055X70BP	Cover A	1	
7		ANE290DX70BP	Roller ring assy	1	
8	⚠	ANE6326X70GP	Turntable motor	1	
9		ANE1008B00SS	Rubber foot	4	
10		ANE3007X70AP	Lower hinge	1	
11		ANE3020B00AP	Door hook A	1	
12		ANE3267X00AP	Door hook B	1	
13		ANE3081B60AP	Door hinge spacer	1	
14		ANE4008X00AP	Fan	1	
15	⚠	ANE400AX70GP	Fan motor	1	
16		ANE400RX70AP	Fan motor bracket B	1	
17		ANE4025X70AP	Air guide A assy	1	
18		ANE1140X70AP	Stopper A	1	
19		ANE2036X90GP	Reinforce bracket	1	
20		ANE9035X80BP	Cord stopper	1	
21		ANE6073X70AP	Oven lamp cover	1	
22	⚠	ANE600BX70BP	H.V.Transformer	1	
23	⚠	ANE6090B00AP	H.V.Capacitor	1	
24	⚠	ANE6202X00AP	Diode	1	
25	⚠	ANE6141Q50GN	Switch	2	Safety switch A, B (AV53606)
26	⚠	ANE6178X70BP	Switch	1	Short switch (AV52606)
27	⚠	ANE6030Q50GN	Oven lamp	1	(240V, 25W)
28	⚠	ANE6152Q50GN	Oven lamp socket	1	
29		ANE4026X70GP	Air guide B	1	
30		ANE6074Q50GN	Oven lamp bracket	1	
31		ANE6037X00AP	Capacitor bracket	1	
32	⚠	ANE900CQ50GN	Power supply cord	1	For Germany
	⚠	ANE910CQ50BN	Power supply cord	1	For England
33	⚠	ANE9027X70BP	Cord bushing	1	
34	⚠	2M204-M1	Magnetron	1	
35		ANE2099X70AP	Reinforce bracket	1	
36		ANE6040B00AP	Oven lamp sheet	1	
37	⚠	ANE6145X70GP	Thermal cutout	1	
38	⚠	ANE202KX00AP	Roller B assy	1	(NOTE 4)
39		ANE3137X00AP	Hook spacer B	1	
40		ANE200YX00AP	Pulley shaft	1	
41		ANE2177X00AP	Washer	1	
42		ANE4030X70GP	Air guide D	1	
43		ANE2076X70BP	Reinforce bracket C	1	
44		ANE4057-F50	Spring	1	
45		ANE6075X70AP	Spacer	1	
46		ANE9082930AP	Clip	1	
47	⚠	ANE600YX70GP	Noise filter	1	
48	⚠	ANE6141X80BP	Switch	1	Door signal switch (V-15G-3C6)
49	⚠	ANE6249X80BP	L.V.Transformer	1	For NE-671
	⚠	ANE6249X90BP	L.V.Transformer	1	For NE-691
50		ANE6306X00AP	Insulation sheet R	1	
51		ANE6544X70GP	Spacer	4	
52	⚠	ANE601LB60AP	Sensor element	1	For NE-691
53		ANE6106X90GP	Parts bracket A	1	For NE-691
54	⚠	ANE6239X70GP	Insulation cap	1	

Ref. No.		Part No.	Part Name & Description	Pcs/ Set	Remarks

NOTE 3: Please order schematic diagram together.
4: When ordering the roller B assy, each three rollers and washers will be shipped.
When replacing the roller B, each three rollers and washers should be replaced at the same time.
Otherwise the glass cooking tray may not turn smoothly.

DOOR ASSEMBLY

Ref. No.		Part No.	Part Name & Description	Pcs/ Set	Remarks
D1	⚠	ANE3001X70GP	Door A assy	1	
D2	⚠	ANE302KX80AP	Door E assy	1	
D3	⚠	ANE3085X70AP	Door C	1	
D4		ANE3006X70AP	Upper hinge	1	
D5		ANE3145X70AP	Door screen A	1	
D6	⚠	ANE3146X70BP	Door screen B	1	For NE-671
	⚠	ANE3146X90GP	Door screen B	1	For NE-691
D7		ANE301HR20AP	Door key lever B	1	
D8		ANE3056X00AP	Handle pin	2	
D9		ANE3018X70AP	Door key A	1	
D10		ANE3019X70AP	Door key B	1	
D11		ANE3021Q50GN	Door key spring	1	

PACKING AND ACCESSORIES

Ref. No.		Part No.	Part Name & Description	Pcs/ Set	Remarks
P1		ANE000BX70BP	Cook book	1	For NE-671
		ANE000BX90BP	Cook book	1	For NE-691
P2		ANE0003X80BP	Instruction book	1	For NE-671
		ANE0003X90BP	Instruction book	1	For NE-691
P3		ANE0013X70BP	Warranty card	1	
P4		ANE0169Q50GN	Servicenter list	1	
P5		ANE0102X80GP	Outer case	1	For NE-671
		ANE0102X90GP	Outer case	1	For NE-691
P6, 7		ANE010AX80AP	Filler set	1	
P8		ANE0108X70AP	Tray packing	1	
P9		ANE0113Q50GN	Tray styrol	1	
P10		ANE0106X70AP	Vinyl cover	1	
P11		ANE0107-500	Door sheet	1	
P12		ANE0601Q50AP	Glass cooking tray	1	

ESCUTCHEON BASE ASSEMBLY

Ref. No.		Part No.	Part Name & Description	Pcs/ Set	Remarks
E1		ANE8034X80BP	Escutcheon base	1	For NE-671
		ANE8034X90BP	Escutcheon base	1	For NE-691
E2	⚠	ANE6126X00AP	Power relay	2	(G4W-11123T-US)
E3	⚠	ANE6479X80BP	Membrane switch	1	For NE-671
	⚠	ANE6479X90BP	Membrane switch	1	For NE-691
E4		ANE8126X80BP	Smoke panel	1	For NE-671
		ANE8126X90BP	Smoke panel	1	For NE-691
E5		ANE8127X80GP	Bracket	1	
E6		ANE6408X80GP	Washer	1	
E7	⚠	ANE603LX80BP	D.P.Circuit assy	1	For NE-671
	⚠	ANE603LX90BP	D.P.Circuit assy	1	For NE-691
E8		ANE8256X80AP	Door opening lever	1	
E9		ANE8072X80GP	Door opening button	1	
E10		ANE8191X80AP	Cook lever shaft	1	
E11		ANE8194Q40AQ	Cook lever spring	1	

WIRING MATERIAL

Ref. No.		Part No.	Part Name & Description	Pcs/ Set	Remarks
W1	⚠	ANE030AX80BP	Lead wire harness	1	For NE-671
	⚠	ANE030AX90BP	Lead wire harness	1	For NE-691
W2	⚠	ANE0350X70GP	Lead wire	1	
W3	⚠	ANE0351X00AP	Lead wire	1	(NOTE 5)
W4		ANE0353X90AP	Shield cable	1	For NE-691

NOTE 5: When this lead wire is open, replace together with magnetron.

STANDARD PARTS

Ref. No.		Part No.	Description	Size (mm)	Q'ty	Usage
S1		XTBANE4+12FK	Screw	4X12	4	Door C
S2		XTWANE4+12E	Screw	4X12	2	Escutcheon base
					1	Parts bracket (For NE-691)
					2	Fan motor bracket B
					5	Base
					1	Reinforce bracket
					3	Reinforce bracket
					3	L.V.Transformer (For NE-691)
					1	Lamp cover
S3		XTNANE4+8B	Screw	4X8	2	Turntable motor
					1	Sensor element (For NE-691)
S4		XTWANE4+12B	Screw	4X12	1	Capacitor bracket
					1	Oven lamp cover
					3	D.P.Circuit
S5		XTTANE4Y12BX	Screw	4X12	1	Stopper A
					1	Cord stopper
S6		XYCANE4+E12C	Screw	4X12	4	Outer panel
S7		XTWANE4+8S	Screw	4X8	2	Fan motor
S8		XYEANE5+E12S	Screw	5X12	2	Upper hinge
S9		XTW4+12Q	Screw	4X12	3	Bracket
					1	Door opening button
S10		XTW4+12T	Screw	4X12	2	Door hook A
					2	Door hook B
S11		XTEANE3+6B	Screw	3X6	2	Thermal cutout
S12		XNWANE5ES	Nut	M5	4	Magnetron
					1	Lower hinge
S13		XYF4+AF6	Screw	4X6	1	Air guide A
S14		XNWANE5ES2	Nut	M5	2	H.V.Transformer
S15		XTW3+8B	Screw	3X8	1	Oven lamp bracket
					2	Power relay
S16		XTWANE35+14N	Screw	3.5X14	1	Oven lamp bracket
S17	⚠	XYD4+EE12F	Screw	4X12	1	Diode earth
					1	Power supply cord earth
					1	Washer
S18		XYEANE5+C16T	Screw	5X16	2	H.V.Transformer
					1	Lower hinge
S19	⚠	XWNANE53GV	Washer		1	Power supply cord earth
S20		XTNANE4+10B	Screw	4X10	2	L.V.Transformer (For NE-671)
S21		XTC4+10BC	Screw	4X10	4	Outer panel

REF.NO.47 NOISE FILTER

Ref. No.		Part No.	Part Name & Description	Pcs/ Set	Remarks
C1	⚠	ECQE2A473MW	Capacitor 0.047μF	1	±20%, 250V
C2, 3	⚠	ECQU2A333MF	Capacitor 0.033μF	2	±20%, 250V
R1		AERBKNY3W3R3	Surge resistor 3.3Ω	1	
S		ANE6489L00QN	Surge absorber	1	
ZNR		ANE604QQ50GN	Varistor	1	
	⚠	ANE6230Q50GN	Fuse	1	8A
	⚠	ANE6231Q50GN	Fuse holder	2	

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